

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

{ STAMPEDSIXPENCE.
{ UNSTAMPED..FIVEPENCE

Original Correspondence.

THE COAL QUESTION.

OUR PRESENT CONSUMPTION OF COAL.

SIR,—That the coal beds of this country are not inexhaustible cannot be denied, and the fact is becoming daily more freely admitted by all parties. It is merely a question of time. Whether the supply can be maintained 100, 500, or 1000 years, it is most desirable that all the circumstances of the case should be fully and fairly understood and stated. That this should be done will be for the interest of all parties, whether owners of coal property, colliery owners, consumers, or the general public. The annual produce of the coal mines of England, Wales, and Scotland, as given in Hunt's "Mineral Statistics," recently published, for the ten years, 1856 and 1865 both inclusive, is as follows:—

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|------|-----------------|------|-----------------|
| 1856 | Tons 66,508,815 | 1861 | Tons 85,512,144 |
| 1857 | 65,274,047 | 1862 | 83,510,838 |
| 1858 | 64,887,899 | 1863 | 88,165,465 |
| 1859 | 71,859,465 | 1864 | 92,662,873 |
| 1860 | 79,923,273 | 1865 | 98,150,587 |

Total for ten years Tons 796,455,406
Average per year for the last ten years Tons 79,645,540

Taking these extracts to be substantially correct, it is worth a little trouble to enquire how far the produce stated represents the coal area actually and practically exhausted. In doing so, we will assume that the average thickness of the beds at present being worked is 4½ feet, and that 1 cubic yard of coal, as existing in the bed, will yield 1 ton of coal; and that, consequently, 1 acre will yield 7260 tons of coal, however it may be disposed of. We will also take the produce as given for 1865—98,150,587 tons—as the coal actually sold or usefully consumed. I find in only two instances the quantity of coal used for colliery consumption—that is, for fuel for engines and workmen—is stated by Mr. Hunt, which it is necessary to deduct, for the purposes of my argument, as follows:—

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|---|-----------------------|
| Total produce for 1865, stated at | Tons 98,150,587 |
| Less colliery consumption, as stated by Mr. Hunt— | |
| Durham and Northumberland | Tons 1,795,000 |
| Staffordshire and Worcestershire | 1,365,750 = 3,160,750 |

Leaving for general consumption Tons 94,989,837

Never having supplied the quantities of coal annually worked at any of the collieries under my charge for the purposes of these statistics for the last ten years, I am not able to state whether, in giving the weight of coal produced, the quantity of coal given by the colliery for a ton, or an imperial ton of 2240 lbs., is meant, but I presume it is the coal actually given by the colliery owner for a ton that is meant. Persons interested in selling or buying coal wholesale (it is different by retail) are well aware that only in a very small proportion of sales is the ton charged represented by 20 cwt. It is much more frequently 21, 22, 23, 24, 25, or even in some districts as much as 30 cwt. to the ton that is given when a ton is charged. As railway sales are most frequently 21 cwt. to the ton, we may, I think, fairly take the tons given by Mr. Hunt to be such, and, consequently, they must be increased by 5 per cent. to give the produce in imperial tons.

The quantity of coal consumed for various purposes connected with the working of a colliery and for workmen's fire coal is a very large quantity—indeed, I believe much larger than is generally supposed. With the worthless refuse taken out of the coals from all beds, it will certainly be fully 10 per cent. of the entire produce. We, therefore, find the return given by Mr. Hunt for 1865 requires to be amended, to represent the actual quantity of coal raised to the surface, as follows:—

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| Quantity for general consumption, as given above | Tons 94,989,837 |
| Add correction for overweight given in sales, 1-20th | 4,749,491 |
| Total | 99,739,328 |
| Add correction for colliery consumption at 10 per cent. of the produce, or 1-10th of the above produce | 11,082,147 |

Making the total quantity raised to the surface for 1865, 110,821,475

Large as this quantity is, it does not by any means represent the total quantity of coal extracted from the beds, or the coal area actually and practically exhausted during last year, as will be seen from the following considerations:—

1.—In most of the collieries of England, Wales, and Scotland the coal is not worked by what is called "altogether working" in the county of Durham—that is, all the worked produce of the bed is not sent to the surface. Arising from dirt beds intercalated in the coal beds, rendering it difficult to keep the slack or small coal free from dirt, from a want of a profitable demand for it in the district, and from the custom of several districts, a very serious quantity of slack is thrown into the goaf or gob, and for ever irretrievably lost. The quantity thus lost is in many cases from 15 to 30 per cent. Suppose we take it to average 10 per cent. throughout the coal fields referred to, we will not, I think, overstate the quantity thus annually worked, and left in the mine for ever, and to be added to the quantity sent to surface.

2.—In many coal beds portions are left unworked, either from their inferior quality or from being necessary to support the roof. In many hundreds of acres some feet in thickness of the lower part of the High Main bed of coal in Northumberland has been thus left, from its being at the present day, from its inferior quality, of no commercial value. For a large extent in the county of Durham the lower portion of the unequalled Hutton seam—varying from 1 to 1½ ft. in thickness—has been and is now being habitually left from the same cause. Nor is this necessity confined to these coal fields; it is more or less unavoidably practised in every coal field of the country. It is difficult to fix a proportion for the coal thus left, but I know one colliery where it is found economical to leave 25 per cent. of the bed unworked, on account of the inferior quality of the coal, and from its being separated from the better and worked portion by a dirt bed or band. Coal is often found unworkable to profit from being injured by faults of different kinds, the quantity so left being difficult to proportion, although it is, no doubt, in many cases considerable.

3.—A source of considerable loss—or reduction at least of the area of workable coal—is the practice and necessity of leaving solid a considerable quantity of coal to protect the estate being worked from the water met with in adjacent collieries working the same bed of coal, and technically known as *barriers*. It is usual to leave these permanently around the margin of estates. When left of the breadth of two chains around an estate exactly one mile square, and containing 640 acres, no less than 62½ acres, or nearly 10 per cent., is required to be thus left in every bed or seam of coal to isolate and ensure the safe working of the remaining 90 per cent. This is not at all an usual case, it is the ordinary practice throughout all the coal fields of this country, and I think the case supposed may be taken as a fair average one, both as to area workable in one isolated colliery on an average, as well as the breadth of barrier usually left. We have thus for the coal actually raised to the surface, and sold, or otherwise usefully consumed, a further exhaustion of the coal beds from which it has been extracted as follows:—

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| 1.—For slack or small coal left permanently underground (say) | 10 per cent. |
| 2.—For portions of beds left of inferior quality, and for coal rendered worthless and unworkable on account of faults, &c. (say) | 5 per cent. |
| 3.—For coal left as barriers for the protection of the estate in course of being worked (say) | 10 per cent. |

Total left underground 25 per cent.

We thus see that the coal worked and sent to the surface represents only 75 per cent. of the entire exhaustion of any coal bed worked for such production, thus:—

| | | |
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| Total quantity sent to the surface, as corrected for colliery consumption and extra weight given per ton in selling, for the year 1865 | Tons of 20 cwt. 110,821,475 | Per cent. 75 |
| Coal left underground, in slack, inferior portions of beds, and for faulty coal, and for barriers against adjoining properties, equal to (say) | 36,940,491 | 25 |

Making total coal beds exhausted to the extent for the year of 147,761,966 = 100 Equal, for a 4½-ft. bed, to exhausting for the year 20,252 acres.

I am no alarmist; on the contrary, I believe the unexplored coal fields of this country (and in no district more than East Yorkshire and Nottinghamshire) contain enormous supplies of coal, which the enterprise and skill of this and succeeding generations will, during a long future, find the means of extracting to the benefit of old England. There is, however, no possibility of avoiding the physical and other difficulties which most assuredly will be required to be over-

come. Deep, very deep mining must supply the future demands of the population and industry of this kingdom. These will involve very large capital outlay and increased working expenditure; and, consequently, greatly increased selling prices, which will operate injuriously on our trade and manufactures, and will necessitate, to meet the circumstances of the case, the coal being leased at much lower tonnage rents than the unduly exaggerated hopes of many owners of coal lands lead them to anticipate.—Yorkshire, Sept. 1. M. E.

ON SHALE OIL AS STEAM FUEL—No. I.

SIR,—The advantages to be obtained by using petroleum, rock, or earth oil for steam fuel instead of coal has been dwelt upon throughout Europe and America for years past, and effort upon effort has been made to bring these liquid coal oils into subjection for that purpose. Under the patronage of the late Board of Admiralty, the resources of the Dockyard at Woolwich were placed at my disposal to test an apparatus I had submitted to them for the purpose, and which had been examined and reported favourably upon by their engineering officers as early as August, 1864. The first experiments were conducted at my expense. The apparatus was made by my own ironfounder. I supplied the oil, and paid my attendants. I was told that if I only succeeded in burning petroleum so as to demonstrate its use for steam purposes the engineers would be satisfied, and that a great step would be gained. On my doing this, I was relieved from further expense; a large boiler, of from 12 to 14-horse power, was made for me, and the whole of the year 1865 was occupied with experiments with American and various kinds of British petroleum. I had the oil under perfect command; it was run into the furnace by means of pipes supplied with the necessary stop-cocks, in any quantity at pleasure, and the trough containing the boiling oil could at any time be emptied.

The first day the boiler was tried the evaporation was 12½ lbs. of water to 1 lb. of oil; but I did not beat the powerful experimental coal boiler of the yard, put, I thought with great unfairness, against me, in the quantity of steam produced per hour in a similar sized grate surface, although the average evaporation of the coal boiler was only 8 lbs. of water to 1 lb. of fuel; neither did I beat it in the quantity of fuel burnt in like surfaces. The coal boiler could burn 25 lbs. of coal in each square foot of grate surface per hour, the oil boiler burnt only 6½ lbs. of oil in the same space in equal time. As this was the first time the oil had been used on a large scale for steam purposes, I had taken care to make the matrix or core through which it was burnt very thick and solid, the flame, therefore, was rather thin, and the combustion slow; considerable attention must be given to the kind of material used for the porous grate. The coke refuse of the oil distiller makes the best core, it is very porous, and is indestructible by fire. Acres of land at Bathgate, in Scotland, are covered with this refuse, no means having yet been discovered for utilising it.

I attended the boiler merely as stoker; the working of it, the supply of oil, and feed-water, were in the hands of the engineers. The first trial showed that the oil could be burnt as fuel without danger, and that it required but very little attention. After a few alterations to the boiler, and using the common founder's loam for a porous core, we succeeded in evaporating 13½ lbs. of water to 1 lb. of oil, and burning off 9½ lbs. of oil per foot square grate per hour. I had asked to be permitted to take out the oil grates and substitute small coal grates, in order that the two fuels might be burnt on exactly equal terms. I had often used stoves for warming buildings of a much smaller character than the boiler fire-places, but I was told that such change of grates could not be allowed, it being very unfair towards the coals, our black diamonds, my fire-places being too small to burn them effectually. The oil boiler, requiring no ash-pits, could have allowed two grates, one above another, in the large fire-places used in the marine boilers. If the centre boiler of the *Hecate* had been fitted with these oil grates, 83 feet super fire surface would have been gained instead of its present 43 feet fire surface, and an evaporation of water obtained of 1120 lbs. instead of one of only 344 per lb. of coal per foot surface per hour. The great defect of the oil boiler was the great quantity of smoke produced; any draught, any carelessness of feeding or supplying of air, produced smoke and soot sufficient to shame coal. The British shale oils produced such quantities as often to fill up the tubes. These oils were evidently stronger as fuels than the American, particularly Young's crude oil, made from the Torbane Hill mineral. About November, 1865, I wished to use a steam-jet, introducing it beyond the grate, as a means of getting rid of the smoke, and increasing the evaporative power of the boiler, and asked to have the necessary pipes supplied me; but, this being a fresh experiment, I was required to put them at my own expense, and I was shown an apparatus for superheating and throwing steam into coal furnaces for the purpose of destroying smoke, which had been experimented upon at a great expense by the Government, and which was quite successful, so far as it prevented smoke, but which could not be used, from the immense amount of steam it required. I determined, however, to try the jet, using it in a different way, and to be at the expense of the necessary appliances, immediately having them put up.

The decomposition of water vapour into its constituent gases—oxygen and hydrogen—and burning them with the vapour of petroleum, is the plan proposed by the Americans. I had all the printed accounts of the experiments conducted by Dr. Fisher, of Newhaven, Mr. Hill, the inventor, and Mr. Stevens. Their want of success—for they had not obtained any real practical results—it struck me was not owing to any inherent defect in the oil, but that they had simply failed in devising the proper means for applying the peculiar description of fuel, or rather of the two fuels, for the use of water as fuel was even less understood than that of petroleum. The American plan was to vapourise the petroleum, and superheat the steam in coils of pipe, mix the vapour or gases in a retort, and conduct them to another coil of pipes, provided with bats'-wing burners. The three lines of pipes were placed over each other, and a wood fire made beneath them. It was evident very many great defects existed in this plan, and it appeared to me that by introducing steam in a more simple manner my porous-material grate would manage it better, and make it more effective. My chemist, Mr. Frank Wright, of Kennington, told me that beyond an improved mechanical effect he did not believe much could be obtained, but he would not advise me to abandon the trial; as facts had so often falsified theory, he did not like to give a decided reply. The theory as to water fuel was that no advantage could be gained by using it as auxiliary to any other fuel, because it took as much heat to decompose water as is given out during the combustion of the gases which constituted it. I determined to use exhaust steam; at least it might give back the heat it had taken to be made into steam.

My method of introducing it was to send jets into the boiling oil below the porous-material grate. It was determined that if water could be burnt as fuel, which was flatly denied by one most eminent engineer whom I consulted, it should be done. On my first trial the steam was turned so fully into the fire-places that in a little time it took possession of them, and turned the oil, in a blazing sea of fire, completely out. But the first few minutes proved the fact that water could be burnt, and a smokeless fire produced. Before my hand was off the tap that turned in the steam the whole mass of black in the surface of the grate rose and disappeared, not up the chimney-funnel, but in the flame. This, flashed to four times its former size, was perfectly smokeless, and so bright that it pained the eye to look upon it; its temperature became higher, and the evaporating power in the boiler was so largely increased that the small force-pump which had been given me to supply the feed-water became too small, and had to be changed for the largest one in the yard.

The fire-places were now too small for the fire; their size was as unfair to the oil as they would have been to the coal. Instead of my requiring double grates, one above the other, the flame was sufficient to fill the fire-places of the largest boilers in the yard. An extremely small supply of steam was necessary, as some of it was wasted. If run in in excess it put the fires out, and came up through the porous grate undecomposed and unburnt. I could no longer use the four fire-places. With one I showed a better result against the experimental coal boiler, both in amount of evaporation and quantity of water evaporated.

It was evident that the true method with these oils as fuels was to

use them for carbonising and burning water gas. If this gas gives no heat itself, which I myself doubt, it prevents smoke, by completely burning up the fuel it was acting as auxiliary to—that being a hydrocarbon. The clear gaseous flame filled the fire-places, the fire-boxes, and the tubes. Its temperature was easily increased by supplying it with petroleum. The colour of the flame was bright yellow, but in the upper row of tubes it was a reddish hue. I regretted there was no instrument in the yard by which the exact temperature of the flame could be ascertained. If a fierce fire were required, plenty of oil and plenty of steam caused the former to be spurted up through the porous material in a fiery spray. It was evident it could be burnt at any rate of speed required. The small size of the fire-places restricted such experiments.

It required two months to find the best method, without disturbance of the furnace, of introducing the steam, and likewise to re-produce the several details of the grate, steam, and vapour tubes. When the jet was used over the flame, or put through it, a considerable quantity of the steam escaped; the latter was under 10 lbs. pressure, and slightly superheated. It was at last introduced in minute jets about 1-10th of an inch in diameter, the jets 3 inches apart, the jets so placed that the steam was sent the whole length of the grate through the boiling oil. It was only necessary to watch the chimney top, and when no smoke appeared the combustion was complete, the products being carbonic acid and water; and all the heat produced was rightly applied, for an evaporation, steady and constant, of 18 lbs. of water to 1 lb. of oil was obtained, British oil from Torbane Hill oil being used. The more smoky oils become now the most desirable fuels, from their containing the most paraffin. The American Pennsylvania appeared, from its volatile nature, to be of greater use for illuminating purposes. In attending the fires, the doors were never opened, and the only care required from the attendant or engineer was to see that the fires did not make too much head; when the boiler became fully heated less fuel was required, a small quantity of air only being admitted under the fire-doors.

The results of the trials prove that the most volatile oils make the worst fuels: those which contain the most paraffin are the best. The distillers make the crude oil for the refiners only; they want an article from which can be procured the largest amount of burning oil; it seldom contains more than 30 per cent. of this; the remaining portions, a heavy oil, contains 28 per cent. more or less, of paraffin; to extract this is an expensive and troublesome operation. The residuum grease or tar, after the paraffin has been extracted, is used as a lubricator, and for this only a certain demand exists; it may be the best lubricator, but it has others to oppose, and it certainly is not the most pleasant to use. The refiners have on their hands such an amount of this heavy oil that it is a serious drawback to their profits. During the progress of refining a large quantity of gas is evolved, about 18,000 cubic feet per ton of oil. If a market could be obtained for this heavy oil, an immense quantity of burning oil could be made; and as for the gas, it is said the works of Bathgate alone could supply the gas companies of Edinburgh with gas sufficient to light the whole of that city at 1s. per 1000 cubic feet. This heavy oil, at a general price of 5s. per ton, is procurable all over the world; there is no danger of its catching fire or exploding. The Burmese natural petroleum contains more paraffin than even the crude shale oil. After the burning oil is extracted from it, the heavy oil is used to coat the bottoms of the native boats, and as tar or grease. It would as fuel create a steam marine for the Indian seas and rivers, and supply the locomotives with a fuel twice as strong, and cheaper in price, than any they have at present. C. J. RICHARDSON.

CURIOUS LORE OF MINERAL VEIN IN CORNWALL.

SIR,—In last week's Journal, in the report of the British Association meeting, you speak of my "discovery" of a curious lore. This word "discovery" will convey a wrong impression to many people. I did not discover the lore; I merely wished to call attention to facts which were well known to many people in the county before, but not to the public generally. Mr. John Pike, late of Camborne, first called my attention to the lore, and in my numerous visits to the mine I received much information from Mr. Wm. Huthnance, the lord of the mine, and Capt. Wm. Michell, one of the agents, as was stated in the paper I read. I, therefore, do not wish for a moment to claim any "discovery," because it is no discovery. Helston, Sept. 6. CLEMENT LE NEVE FOSTER.

THE PNEUMATIC, OR BESSEMER PROCESS.

SIR,—The objects of the British Association are professedly the advancement of the Arts and Sciences, and the diffusion of knowledge, and nothing has tended more to elicit truth or to expose error than controversy rationally carried on. I cannot, therefore, understand why Lord Wrottesley should have been so filled with virtuous indignation at the introduction of controversial matter into my paper on the "Pneumatic Process," read at Nottingham last week, and the inconsistency of his Lordship's animadversion becomes more apparent, when we learn that the reading of my paper was deferred in order to give Mr. Bessemer, "the only man in the world able to answer my statements," an opportunity to attend and enter into controversy. And it is certain that Mr. Bessemer must have been furnished with a copy of my paper by the committee, or otherwise, with a view of enabling him to enter into controversy, and, at all events, informing him that I was about to have a paper read at the meeting. It appears to be a very high compliment to my abilities, when it is publicly stated that Mr. Bessemer is the only man in the world who can reply to my statements before the date of the scientific and philosophical world. Now, as regard Mr. Bessemer's remarks upon my paper, I think I am able to convince him that in some points he has been misinformed, and that in some others he has adopted erroneous views, and I now proceed to do so, disclaiming all personal feeling, and desiring only that right conclusions may be arrived at upon an interesting question, and I invite Mr. Bessemer to respond, and if he can show me to be in error I shall frankly admit it. Apart from any private consideration, the discussion must throw some light upon a subject of the deepest national importance. First, then, Mr. Bessemer has stated that Mr. Heath, residing many years in India, became acquainted with the fact that Wootz steel owed much of its excellence to the presence in it of manganese. Now, I have been for nearly forty years familiar with the Wootz ore of India, and have never discovered a particle of manganese in this magnetic ore of iron. Moreover, the analysis of Wootz steel by the late Mr. T. H. Henry, the most scrupulous and exact of analysts, gives not an atom of manganese. (Vide p. 775 of Dr. Percy's "Metallurgy.") Mr. Heath was one of my father's most intimate friends, and always consulted the latter on metallurgical points, though he seldom followed his advice, being somewhat opinionated. I have Mr. Heath's correspondence with my father (and with myself latterly), and Mr. Heath states in his letters that he took the idea of his manganese patent from the experiments on oxide of manganese and iron made by my father, the details of which experiments first appeared in the "Philosophical Magazine," and subsequently in my father's "Papers on Iron and Steel." (Vide pages 750 to 777.)

Mr. Heath laid his patent process before my father, and asked his advice. That advice was to patent the use of oxide of manganese, and not carburet of manganese; but, unfortunately for himself, Mr. Heath did not adopt this advice, and his patent was lost in consequence. Carburet of manganese, as prepared by Mr. Heath, was obtained by intimately mixing oxide of manganese and pitch, coal-car, or other carbonaceous matter, and melting the mixture in small crucibles at an intense heat. All attempts to produce the so-called carburet of manganese by melting the mixture in large crucibles, such as cast-steel melting-pots, proved abortive, as the mixture could not be reduced on this large scale. The substance Heath obtained was not an atomic compound of carbon and manganese, and, therefore, certainly was not carburet of manganese, though improperly so called. The addition of this substance, or compound, to cast-steel spoiled the quality of the latter for tools, though it facilitated its welding. When the elements of Heath's carburet were introduced into the melting-pot, in place of the product of those elements, the results obtained were better than with the product itself; and, lastly, when all mixture of carbon was wholly dispensed with, the results were excellent, and far superior to any previous results obtained, either with the carburet itself or with its elements. Thus Heath committed an egregious blunder when he claimed the use of carburet of manganese in place of simply oxide of manganese. Mr. Webster, of the Penns, near Birmingham, had, in 1827, obtained good results with oxide of manganese and pieces of charcoal, where no intimate mixture of the elements took place; and D. F. Davis, at the Brades Steelworks, used the oxide of manganese alone in melting steel, merely adding the carbon as a hardener, when required, and omitting it altogether when the steel was of a sufficiently hard temper without an addition of carbon. These parties worked secretly, and their knowledge would not have affected Heath's patent had he claimed the simple oxide of manganese, which is, indeed, all that is required. No steel-maker now uses carburet of manganese, nor even the elements of it intimately mixed. They add simply oxide of manganese when the steel to be melted is sufficiently hard; and, if they wish to have a harder temper, they add charcoal in small pieces (not in powder), and the manganese, if added in one lump, or in half-a-dozen smaller lumps, has just as good an effect upon the steel as when pulverised oxide of manganese is used. In short, it is the interest of all steel-makers to avoid, as much as possible, any mixture of the elements which, in the melting-pot, might produce carburet of manganese, so called. The quantity of manganese employed being small, the injury done to the melting-pots by it is not so great as might be imagined. I think, therefore, I have proved that the carburet of manganese, properly so called, claimed by Heath, is in reality of little value; its use has

been superseded by that of the simple oxide of manganese, which is the great improver of pot-metal cast-steel.

Mr. Bessemer has alluded to ten of my patents for using manganese, as having been obstructive to his process. This, I submit, is an error. In September, 1856, I took out four patents—Nos. 2168, 2170, 2219, and 2220, and these four, supposed to have been all valid and practicable, were all I ever took out that could have in any way controlled or obstructed the pneumatic process. Three of these four patents were speculative, and were taken out at Mr. Thos. Brown's request, and under Mr. Hindmarch's advice, but contrary to my judgment, as I was well aware that two out of the three could do no good at all, as, indeed, appeared upon trial; whilst the third could not even be tried, seeing that pure manganese was not then, neither is it now, an article of commerce. There is, however, then, but one patent process in place of ten to deal with, and that one remains, No. 2219, dated Sept. 22, 1856, in which I claim to improve the process of iron or steel manufactured under the pneumatic process by adding to the said iron or steel, when in the melted state, a quantity of melted spiegel-eisen; and, as this patent claimed the novel application of a known substance—melted spiegel-eisen—to iron and steel manufactured by a novel process, the pneumatic process, rendering a doubt of the perfect validity of this patent, whilst the cannot be a shadow of a doubt of the perfect validity of this patent, whilst the value of my patent process itself is universally admitted by Mr. Bessemer's licensees, one of whom thus expresses the following opinion:—

"August, 1866: In reply to yours of the 25th, there can be no question as to the value and hitherto indispensable nature of your spiegel-eisen process in the manufacture of Bessemer steel. We believe that no good steel has ever been made by this process in any other way; and now it is the adopted principle, made by this process, to manufacture the steel with as much certainty as we perform any other process in our manufactory.—We are, &c."

But Mr. Bessemer argues that my process for using spiegel-eisen, detailed in my patent, is identical with Heath's process, and, therefore, that my patent was void. Let us examine. Mr. Heath says—"I claim the use of carburet of manganese in any process whereby iron is converted into cast-steel." This claim was made in 1839, and, therefore, could only relate to the then known processes for the conversion of iron into steel, so it could not relate to a then unknown process—the pneumatic process for the conversion of iron into steel. Grant for a moment, for the sake of argument, that Heath's solid carburet of manganese is either more or less than my melted spiegel-eisen, still Heath's claim could not invalidate mine, for he could have laid no claim to a novel and then unknown application of his carburet, to a then unknown process, for the conversion of iron into steel. My spiegel-eisen patent was taken out as an improvement—not merely upon J. G. Marten's pneumatic process, but upon any other known pneumatic process—for the manufacture of iron and steel, and it was carefully mentioned in my specification. The application, therefore, of spiegel-eisen in Mr. Bessemer's pneumatic process was necessarily included in my patent claim. I can most distinctly state that I never offered to Mr. Bessemer or to any other party my speculative patent for the introduction into pneumatic steel of pitch and oxide of manganese. This invention I well knew from the first was worthless, and the patent was only taken out to oblige Mr. T. Brown. Mr. Bessemer, therefore, is in error in stating that I ever lauded this patent process as a great invention. It is also quite certain that I never made any offer of my spiegel-eisen process to Mr. Bessemer, though he visited me at Coleford with the intention, I believe, of either purchasing it or becoming a licensee. At that time, however, I was pledged in honour to the Ebbw Vale Iron Company, and was, therefore, unable to entertain Mr. Bessemer's propositions, which I would otherwise gladly have done, which inability I regretted at the time, and have since had still greater cause to regret. The use of spiegel-eisen in the manufacture of pot-metal steel, even supposing it had been used in that process prior to the date of my spiegel-eisen patent, would have been invalidated that patent, because such an application would have been simply the use of a known substance in a known process of steel manufacture in the ordinary manner, and not a novel application of a known substance to a novel process for the manufacture of steel. That spiegel-eisen was not used in Sheffield in the manufacture of pot-metal steel at the date of my patent appears pretty conclusively established, by the fact that it is only since the publication of my patent that spiegel-eisen has come into use amongst the Sheffield manufacturers of pot-metal steel.

Mr. Bessemer states that on looking into my patents he found that they could not be considered valid, and that, therefore, he commenced using manganese, and has used it ever since. He speaks also of those patents as ten in number. Now I have shown that one only—namely, my spiegel-eisen patent—has any bearing upon the subject, and have likewise demonstrated the unquestionable validity of this particular patent, which has, moreover, been attested by the opinions of Mr. Webster and the late Mr. Hindmarch, the most eminent patent counsel of the present day. It is also certain that the only application of manganese which has rendered the Bessemer process a success is its application in the metallic state, as contained in spiegel-eisen, and that no other dissimilar application of manganese has been found of service, is evidenced by the fact that all Mr. Bessemer's licensees use spiegel-eisen, and that only, in order to render their Bessemer steel suitable for the market. If, then, Mr. Bessemer did use spiegel-eisen subsequently to the date of my patent, he must have infringed that patent, up to the time when from non-payment of the 50s. stamp duty it lapsed. Subsequently to the lapse of this patent, of course, Mr. Bessemer was at liberty to make use of my process, and to vend the steel, and to invite me if he liked to dispute his right to do so. He never, however, gave me any such intimation, previously to the time when my patent rights ceased, and it is certain he would not afterwards have made such an offer.

Some parties of influence, and great influence, having agreed with myself and partner to carry out the joint processes of Mr. Bessemer and myself, my partner had an interview with Mr. Bessemer, and asked him to grant a license for the use of his pneumatic process. This Mr. Bessemer refused to do, stating that he would not grant a license for the use of that process to any party with whom I was associated. My negotiations, therefore, with the influential parties above mentioned necessarily came to an end, and as my process was of no use without the pneumatic process, just as the pneumatic process alone was itself imperfect apart from mine, I was prevented from making further progress.

Mr. Bessemer has, as he states in one of his patents, intimated that it will be found advantageous to add to pneumatic cast-iron small quantities of various substances, amongst which he names oxide of manganese. Now, if oxide of manganese is spiegel-eisen, or if oxide of manganese does all that spiegel-eisen effects in the improvement of Bessemer iron and steel, how comes it that spiegel-eisen only, and not oxide of manganese, is employed universally in the manufacture of Bessemer iron and steel? And, such being the case, why did not Mr. Bessemer use the phrase "spiegel-eisen" instead of "oxide of manganese"?

Mr. Bessemer has in one of his patents, as he observes, stated that when it is desirable to make an alloy of zinc, copper, silver, or "other metals," with his iron or steel, these metals may be introduced into his converter in the manner he describes, either in a fluid or solid state. Now, the words "other metals" cannot apply to spiegel-eisen, which, commercially, is called iron, and is in reality an alloy of two metals, so that it cannot be one of the "other metals" alluded to by Mr. Bessemer. The mere statement that "when it is desirable to make an alloy of zinc, copper, silver, or other metals," with iron and steel, such addition of the particular metal which it is intended to alloy with the iron or steel shall be made in the manner described—whether in the liquid or solid state does not constitute a patent claim; on the contrary, such a claim to be valid must be definite and exact. Mr. Bessemer contemplated, no doubt, the use of all ordinary metals, but spiegel-eisen is not an ordinary flux, but an alloy. In short, Mr. Bessemer should have stated simply that he claimed the use of melted or solid spiegel-eisen as the one thing useful for the success of his process, and had he done so, of course, my patent would have been set aside. But in none of his patents does he allude to spiegel-eisen, or any similar alloy of manganese and iron. That he did not do so by no means detracts from his merits, for the most learned metallurgists in Europe, including Prof. Tunner, never thought of this essential addition of spiegel-eisen, neither has it been named in any of their writings. Spiegel-eisen had very probably been used at Bochum for melting with malleable iron, but to melt spiegel-eisen with malleable iron in melting-pots is a novel process; but to melt spiegel-eisen into melted steel or iron, obtained by decarbonising melted cast-iron under the pneumatic process, is quite a different process. In the former case, the solid spiegel-eisen is added with the material to be melted; in the latter instance, the liquid spiegel-eisen is added at the close of the process to melted iron or steel.

Mr. Bessemer seems to be under the impression that I wished to claim the use of manganese generally and exclusively in the manufacture of steel. I had no such wish, being well aware that the use of manganese in the manufacture of steel had been more or less adopted for upwards of half a century before the date of my spiegel-eisen patent (Sept. 22, 1856). What I claimed was simply this:—The addition of melted spiegel-eisen to melted pneumatic cast-iron; in other words, a novel and useful application of a known substance to a novel method of manufacturing iron and steel. Mr. Bessemer also appears to think that my patent was taken out with a design to crush and cripple the progress of his own invention. So far was this from being my wish or intention, that one chief object I had in view was the speedy development of Mr. Bessemer's process, which I well knew was the greatest metallurgical invention of modern times. I, of course, wished to realise something from my invention, but my earnest desire was to unite cordially with Mr. Bessemer in carrying out our inventions for our mutual benefit, and for that of the nation at large. In proof of this, I may observe that at that time, under the signature of "Sideros," I was about the only writer who appreciated and defended Mr. Bessemer's invention from the unparalyzing ridicule which many, who ought to have known better, were not slow to heap upon it. In short, Mr. Bessemer's inventor with difficulties was one individual, and Mr. Bessemer as the successful inventor is now viewed in a very different light, though his merits, in the first instance, were quite as great as they are at the present time, seeing that he was then contending against prejudice and ignorance. From letters of Mr. Bessemer's, written to me in the years 1856-7, it appears that at that time he gave me far more credit for the value of my spiegel-eisen invention than he is at present disposed to allow, but as he regards a moral claim as greater than a legal one, I cannot but think that when he has well weighed and considered the matter in all its bearings he will come to the conclusion that I have undoubtedly a strong moral claim to receive some pecuniary acknowledgment for the services I have rendered through my spiegel-eisen process, the patent for which was so unfortunately permitted to lapse. I can assure Mr. Bessemer I in no way grudge him the prosperity that has attended the success of his operations, and that I fully recognise his merits as an inventor; whilst personally, and apart from any private interest of my own, I should wish to be on friendly terms with him, and that I regret this should not always have been the case, owing to misunderstandings and misrepresentations, by which I, and probably Mr. Bessemer himself, may have been misled. On reading the remarks of Mr. Bessemer upon my paper on the pneumatic process, as they appeared in the *Morning Star* of Aug. 27, I immediately wrote the following letter to Mr. Bessemer, to which he has not yet replied, but to which I have no doubt he will respond in due course:—

"Cheltenham, Aug. 28.—I observe in several newspapers a statement reported to have been made by you at the British Association, after the reading of my paper on the pneumatic process, to the effect that you offered to contest with me the validity of my spiegel-eisen patent, and that I declined your challenge. I beg leave most emphatically to state that no such challenge was ever made to me, directly or indirectly; that I never before heard so much as an allusion made to such a challenge; and that had such a challenge ever been made to me I should have accepted it without a moment's hesitation. I beg leave also to say that though Mr. Heath claimed the use of carburet of manganese in any process by which iron was made into cast-steel, at the time when his patent was taken out, he did not, neither could he, claim to use it in a then unknown process—namely, the pneumatic process. Moreover, carburet of manganese is not spiegel-eisen, and spiegel-eisen, not carburet of manganese, has made your process successful, and it is universally employed by your licensees. Heath's

patent was a complete blunder, for it is not carburet of manganese that improves pot-metal steel, but simply oxide of manganese, and oxide of manganese alone is used by steel makers all the world over. The validity of my patent has been fully borne out by the legal opinions of Mr. Hindmarch and Mr. Webster, the best authorities on patent rights, and both well acquainted with the nature of Heath's patent claim. I am glad to see that you consider a moral claim stronger than a legal one, for such being the case, you cannot possibly disallow my powerful moral claim to be liberally treated by the Bessemer Company.—I am, dear Sir, yours faithfully, ROBERT MUSHET.

I shall be glad if the foregoing remarks tend to throw some fresh light upon the processes of Mr. Bessemer and myself.

Cheltenham, Sept. 5.

PROOF OF SLATES BY FIRE.

SLATE QUARRIES, ACCOUNTS, MANAGEMENT, &c., &c., &c.

SIR,—A word or two on the *et cetera* first of all. I have a *three-fold* title to assume the name of "Cambrian." I supposed that Mr. Harvey had well known my real name, but it seems that he does not. As he signs himself "Thomas Harvey (of London)," in last week's *Journal*, it would appear that he is an Englishman, as his name also implies him to be. But these personal allusions and insinuations do not interest the public, to whom the *Journal* is addressed, and if the public are to learn anything from the correspondence it contains, and to rely on it, such allusions must be avoided. Here, then, let these insinuations cease, unless it be for the purpose of exposing an *alias*, which any scoundrel may assume.

Mr. Harvey's letter in the *Journal* of June 23 was the one to which I referred. The words in it on Proof of Slates by Fire refer only to "Cambrian Eryr," and have no bearing on the main argument, on which our opinions have been, in the main, in accordance with those of Mr. Harvey, &c.

Mr. Harvey again refers to the component parts of slates (obtained, of course, from the analysis of Mr. Bamber); he entirely avoids, however, any allusion to remarks made on such component parts in accordance with that analysis, in my letter inserted in the *Journal* of June 2. Iron in any form is bad; it deteriorates the cleavage if it exists to a great extent, as it does the slates also, when deposited in the form of cubes of iron pyrites. The analysis also shows that it entirely decomposes. Lime also is bad when it is *unslacked*, as it is in slates, as our correspondence with "J. F. N. H." has shown. This is further shown, as every particle of it was decomposed on analysis. Magnesia also was entirely decomposed by the analysis. What are we, then, to think of Mr. Harvey's opinion, that the best slate contains all these three ingredients? As we have before observed, may not better slates be found which are free from these three injurious parts? Who, except Mr. Harvey, has obtained analysis, or been so much more bold as to maintain that the best slates are those which contain component parts of iron, lime, and magnesia, which not only acids do, but the weather may decompose.

But really, Sir, this repetition of old matters, and also their consequent second refutation, is too much of a good thing. It may have one object—to recall the past, and to call away attention from the present. I say this for two reasons—1. The conclusion of the letter of Mr. Harvey (of London), in last week's *Journal*, which is as follows:—"The skeleton forms of accounts furnished by 'Cambrian' appear rather to be the production of an amateur than of a practised Welsh quarry manager (query, is Mr. Harvey a practical Welshman?), and it intended to pass under the scrutiny of a public accountant or auditor would have to be framed in a different manner." The forms of accounts given by us so far in the *Journal* were approved some years ago by a very eminent man in London. They have been regularly passed by "a public accountant," who is "the auditor," and no insinuations or taunts in future shall draw us from the object of quarry accounts, which was commenced on August 25. We will see whether "the balance-sheet of profit and loss" does not give a clue to much laxity in the present mode of keeping quarry accounts.

At what quarries is such an account kept? It would appear from Mr. Harvey's last of two letters, in the *Journal* of last week, that "a proprietor in the Prince and Princess of Wales Quarries received 95 per cent. the first year on all his outlay, not from working profit certainly, but by a sale of a small portion of the property." What did he receive other years? Was he not a proprietor in the Prince of Wales only? and did he not receive the money from the sale of part of the first company to the Princess of Wales Company? Was a profit and loss account kept there? We might ask further questions on which we are fully informed, but we hope that there will be an end of this sort of questions in future: we will keep to our quarry accounts. THIRCE CAMBRIAN.

PRESENT STATE OF THE MINING INTEREST.

SIR,—The aspect of the mining interest is at present most interesting, and bespeaks the attention of capitalists, and of companies working in the various fields of mineral industry. The rapid declension in the Bank rate of interest has proved efficacious in reviving the metal and stock markets, and in renewing legitimate speculation in the mining world. It was simply impossible that the metal markets should not feel such a condition of things, sensitive as it is beyond all other markets, except that one—money. Accordingly the shares of dividend-paying mines are rapidly advancing in value. Even tin has risen in price, depressing as all the prospects of that interest were, and in spite of the terrible competition of the product of the great Archipelago. Copper has also risen, although the news from Australia confirms prognostications of increased production there. Notwithstanding these auspicious conditions of the mining interest, especially in Cornwall, where hope was well nigh extinguished, there are grounds of serious apprehension, and as serious complaint. We are grieved that, in spite of indications of improvement, every class connected with Cornish mining is suffering, except that class which does least for this great and glorious industry, and shows least concern for its welfare. In truth, the landowners at present, speaking generally, have nearly all the profit to themselves, and in some mines they alone derive any advantage. It is notorious that mines in Cornwall have been long worked at a loss, with few exceptions. During this protracted and terrible depression, what sympathy have the landlords exhibited? How many of them have reduced the royalties? Is it not well known in Cornwall that had the landlords been all absentees, and resided in the satellite or one of the planets, they could not have shown less sympathy with the mining interest, the adventurers, or the miners? Out of 150 tin mines in Cornwall and on the borders only three have been worked with satisfactory profits, yet in all this distress the owners of the soil stood selfishly aloof, demanding "the pound of flesh," a figure which does not too severely illustrate and express their conduct.

I have shown in my statistical work on the Mines of Devon and Cornwall, page 159, that one celebrated mine, near the Cornish frontier, paid its landlord in royalties the enormous sum of 210,000*l.*, of which upwards of 11,000*l.* was paid in 1864, and he, not content with that munificent acquisition, demanded 20,000*l.* for a new lease; and 2052*l.* was demanded, and paid for land used in the process of the mining operations. In the year 1864 one mine in the county of Cornwall paid in royalties 2382*l.* in round numbers, another 2264*l.*, and the payments of a considerable number averaged each about 2000*l.*

Let the following list, by way of example, illustrate our case:—

| Name of Mine. | Royalty. | Returns for 1864. | Paid to lord. |
|-------------------------|-------------------------|-------------------|---------------|
| Herodfoot..... | 1-15th | £14,585 7 2 | 2972 7 2 |
| Trelawny (average)..... | 1-17th | 20,300 0 0 | 1299 8 4 |
| Marke Valley..... | 1-18th | 16,946 18 10 | 941 9 11 |
| West Caradon..... | 1-15th | 12,949 9 4 | 863 5 7 |
| East Caradon..... | 1-18th | 35,488 13 7 | 1971 11 10 |
| Phoenix..... | 1-18th | 24,943 19 1 | 1385 16 1 |
| Far Consols..... | 1-16th | 28,099 0 0 | 1756 3 9 |
| Wheel Basset..... | 1-15th | 19,210 11 9 | 1280 14 1 |
| Polverio..... | 1-18th | 11,098 7 10 | 616 11 6 |
| Wheel Buller..... | 1-16th to 1-30th. | 6,055 4 5 | 201 7 2 |
| West Basset..... | 1-15th | 29,071 0 0 | 1938 1 4 |
| Wheel Grenville..... | 1-15th | 9,550 2 4 | 636 13 9 |
| West Chiverton..... | 1-15th | 19,412 16 0 | 1294 3 9 |
| Nangles..... | 1-18th | 2,262 0 6 | 125 13 4 |
| Great Wheel Vor..... | 1-18th | 42,884 0 0 | 2382 8 11 |
| Wheel Seton..... | 1-15th | 27,204 10 11 | 1820 6 0 |
| West Seton..... | 1-15th | 31,189 10 0 | 2079 6 0 |
| Wheel Ury..... | 1-18th | 16,226 4 4 | 901 9 1 |
| Carn Brea..... | 1-18th and 1-19th. | 40,759 7 7 | 2264 8 2 |
| St. Ives Consols..... | 1-18th | 13,911 1 4 | 772 16 9 |
| Wheel Mary..... | 1-18th | 7,801 13 8 | 433 8 6 |
| Rotallack..... | 1-18th cop., 1-24th tin | 31,104 2 3 | 1481 2 11 |
| North Gribbler..... | 1-15th | 1,706 1 3 | 113 14 1 |
| Wheel Fortune..... | 1-18th | 20,391 5 1 | 1019 11 0 |

It is impossible for any man who recognises in business the principle of "live and let live" to read the list thus placed before our

readers without the conviction that the landowners of Cornwall make a sorry appearance beside the millowners of Lancashire. The latter class behaved with English manliness and humanity, saving their people not only from famine and sickness, but from expatriation, and even removal from the homes they had occupied, except in inconsiderable numbers at the outset of the distress; and then it was a certain class of philanthropists who desired to aid the removal of the workmen. If this be true, what are we to think of a Cornish magistrate, who figures in the *Times* of Monday last, who coolly contemplates the banishment of his fellow-countrymen and neighbours to the coal districts on the following enlightened plan:—"The employers—not the landowners, but the employers exclusively—to advance the money for the removal of the miners, and the men to pay back from the wages acquired in their new field of labour the money thus advanced. It is marvellous to perceive the progress of invention even in the region of benevolence. For frugal philanthropy, we commend all men to the discovery of the Cornish magistrate. Sincerely considering this selfish scheme, how absurd to expect that the very men who have been carrying on mining enterprise at a loss should advance the money for the removal of their workmen, while the landowners, whose tenants both classes are, quietly look upon the general ruin, gathering something even from the ashes of an industry which they permitted to be consumed, without an effort to prevent the result. Not less than 50,000*l.* a year has for the last 20 years been received by the landowners from the royalties of Cornwall, a sum of 1,000,000*l.* sterling. Surely these are not the men to read lectures or write to the *Times*, invoking the generosity of shareholders, while they keep padlocks as well as buttons upon their own pockets. It is quite clear that these heavy royalties are weighing down the interest in question, and that the time has arrived when some change should be made in the relation of landlord and tenant in Cornwall.

Allowing that emigration might improve the condition of the working miner, we ask with profound seriousness what is to become of the mining interest? The landlord is unquestionably entitled to an equitable return for his land, but the equitable rights of the tenants by whom the mining interest is sustained is at least equally important. It appears to us that a just arrangement might be based upon a fair purchase rate, and a proportion of the profits which the intelligence of those interested could regulate. Both would occupy amicable positions, and the general interests of mining enterprise would be benefited. What an example has been set to the lords of the soil by a spirited and generous member of their own body, who we are sorry to add stands solitarily as such an example. We refer to J. S. Agar Roberts. This gentleman has not only lowered his dues, but actually declined in some cases to receive them; and even, beyond the liberality and wisdom thus displayed, he subscribed for machinery to lessen the severity with which some mining operations press upon the workmen. This honourable gentleman represents the eastern division of the county, and we venture to say the wisdom and good sense of the M.P. will make a tolerable show besides the originality and eccentric philanthropy of the J.P. THOMAS SPARGO.

Gresham-house, London.

COPPER MINES.

SIR,—As the demand and supply governs the price of every commodity, it must be apparent to everyone acquainted with the state and prospects of the majority of the tin and copper mines in Great Britain that unless some very important discoveries are made in the deep mines they cannot continue to work for many years to pay their way. The best men are leaving the country by thousands, particularly the best and most able description of workmen, known as "tributers," the very young and aged men only being left, so that whom have not the means to venture their labour for three or four months together, consequently there is a dearth of discoveries. In former years, when men had no Australia or California to go to, they risked their labour where encouragement was given to them. The system is very different at the present time. Besides, the richest description of ore has invariably been found within the first hundred fathoms below the adit or day level, and as mines deepen the deposits appear to decline in quality; for example, compare the present returns of mineral ores with the returns during the existence of the first ten years of the majority of the greatest mines we have ever had during the last half century; such mines as Neptune, Fortune, Friendship, Penberthy Crofts, Darlington, Godolphin, Alfred, Virgin, with numerous other mines in the great mining districts of Cornwall. The price of the ore in these mines averaged from 5*l.* to 15*l.* per ton, and frequently parcels from 20*l.* to 30*l.* per ton, when the price of copper was much about the same as at present. Mines will be continually found in new countries near the surface yielding a rich percentage, and unless the landowners of this country reduce the royalty (or dues), the returns from our mines must greatly fall off, and many of the most productive mines cease to work altogether. Our mines in general yield the yellow sulphuret of copper, but the mines in Chili, &c., the grey carbonates of copper, of three times the percentage, so that to meet competition from abroad must be the question for the future, or the majority of British mines will cease to exist in a few years. Every encouragement ought to be given by the landowners of this country to the discovery of new mines, as much risk and uncertainty attend the speculation generally, and occasionally a prize is found, or no mines would exist in the next generation. It is a question whether the mines in Chili, Australia, South Africa, or California can pay the working cost, &c., with the standard for copper below 120, or 14s. per unit, nor can the majority of our British mines—new and young mines the exception.

Sept. 5.

A. BENNETT.

CORNISH MINERS.

SIR,—Mr. Fawcett's letter in a recent number of the *Journal* is full of good sense, and deserves further notice of your readers. The emigration of the unemployed Cornishmen would be a great mistake, yes, more, it would be a national loss, at a time when the coal mining districts of Great Britain are in want of skilled mining labour. It is notorious that new works in those districts are with difficulty supplied with underground workers, and that all the miners Cornwall can send will be readily and gratefully absorbed at home, without driving them to seek for bread in distant lands. Moreover, the Cornishman are in many respects the best miners we have in the country, and the most advanced of their class. Natural and political influences are busily operating to increase the present scarcity of hands in the coal districts, and there is no county but Cornwall able to give fresh hands, well skilled in the work.

I will, if you will kindly afford me space, point to some of those influences, in proof that to raise a ton of coal will every year require an increasing expenditure of labour. In other words, the production of our 100,000,000 tons will annually want an increasing number of hands, to say nothing of the hands required for getting the increased consumption, and that the ordinary increase of the coal mining population will be found totally inadequate to the demand. Most of the shallow seams are exhausted, and the coal supply must come from mines of increasing depth from the surface. The winning of those mines can only be done by large capitalists or public companies. The outlay of a large capital does not necessitate the working of much more extensive areas to one shaft to secure the proprietors against loss, and the consequence is that, in proportion to tonnage, more labour is required for underground carriage, and for maintaining the roads, air galleries, and ventilation in the highest state of efficiency, the neglect of which would hopelessly sacrifice both life and property. Under the former system shallow mines were easily approached, and in their management was found the least possible expenditure of labour and care, as the first inspectors of mines well know, without any very remarkable sacrifice of life or property. The temperature of deeper mines, though more uniform, is higher, and sooner exhausts the miner. His hours of labour and the work done must, therefore, be lessened. Trades' Unions are every year perfecting their organisation. Their delegates are for the most part men of some personal influence, more sober, honest, and shrewd than the old type of delegate, who first inflamed his own passions at the public-house, and then inflamed the members to acts of rashness and violence, finally decamping with the Union cash-box. The delegates are now confederate. On most questions they are in advance of their constituents. They are painstaking, keen men of business, with a fluent tongue and a sober head. They exact and receive more rigid obedience from the members than was ever before obtained, and the ultimate (I might almost say the immediate) result will be (if it is not now) a general reduction in the hours of labour and in the work done by each miner. The education of miners' children will also have an important bearing upon the labour question. Boys under 10 or 12 years of age have only recently been prohibited from working in coal mines. Under the pressure of the delegates we shall soon have a further advance towards compulsory education, and a higher limit as to age. At present the younger boys are simply forced into other trades or agriculture, either permanently or otherwise, rather than to school. In this way the aggregate of mining labour will lose several years in the start of a mine's life, to be gained back to himself and the country, we may hope, in an improved moral and social condition. With these influences constantly and increasingly operating the number of miners eligible for work in every 1000 of population, as well as the work done, will be greatly reduced. Provision has also to be made for producing the 4,000,000 or 5,000,000 tons of increased consumption year by year. It is computed that at least 9000 fresh hands must be added every year to the number of underground workers. It will surely be an

aggravation of the present scarcity to allow the well-trained Cornish miners to be dispersed in foreign countries.

Emigration implies a tax upon either the local or national purse, and, however humanely managed, it must cast a gratuitous affliction, and, if imposed, would confer upon the men no greater prosperity, nor, as I think, more precious liberties and privileges than they have in the good old country. The alternative has been earnestly put forward by Mr. Fawcett—migration rather than emigration. Employers in other districts would, no doubt, lend a helping hand by advancing the cost of removal if the men could not afford it. The Cornish miners are said to be a frugal people, and would soon earn enough to repay the loan out of wages varying from 5s. to 8s. per day of eight hours for men, and upwards of 3s. for boys. An agency office should forthwith be opened in Cornwall, and advertised in the coal districts, to facilitate engagements between the men and those employers in need of them. Occasionally the incomers might have to put up with a little short-lived opposition from resident miners, but only where a strike existed; and that would easily be provided for by introducing the new hands in sufficient numbers to give confidence and secure immunity from attempts at intimidation.

The Cornishmen are generally known as educated, sober, regular workmen, and their example would be as a "little heaven" in those districts where education is little valued, sobriety regulated chiefly by the scale of wages, and irregularity of attendance the prevailing habit.

A COUNTY MAGISTRATE.

MINING SHAREDEALING.

SIR,—After more than three months anxiety and depression, with an almost total cessation of business, the mining market has again resumed its customary activity and cheerfulness; in fact, I may say that a pleasing excitement is continually kept up by the demand for shares in mines, which have for a long time been neglected, and the names of which the brokers had almost forgotten. The enquiry for mining investments, together with the reduction of the Bank rate of discount, and the rise in prices of metals has, of course, had a very favourable effect on the prices of all legitimate and bona fide undertakings, and in many instances shares have risen in value as much as cent. per cent. I find, however, that advantage has been taken of the general demand by promoters, and several unprincipled persons, to put on to the market and before the public various schemes and undertakings, the carrying out of which, I should imagine, the most sanguine investor would scarcely contemplate, and I would, therefore, recommend all persons desirous of investing to be particularly cautious in selection, as prospectuses and circulars are now got up in such a manner that none but those who have either a practical knowledge of the different mines and districts, or of the stability of the names attached, can in any way detect the spurious from the legitimate undertakings. Many private individuals have lost large amounts of money by placing too much confidence in the reports and statements of promoters and self-styled mining agents and engineers; but if the public would, before purchasing, have the properties inspected by some practical man, or ask the advice of a mining agent whose knowledge and experience enable him to give reliable and valuable information, losses in mining would be less frequent, and the more legitimate undertakings would be better supported. There are many who buy and sell mining shares, and have no knowledge whatever of the real value of the property in which they are speculating, and are guided in their transactions entirely by the quoted prices. Although large profits are sometimes made by such dealings it is undoubtedly very uncertain, and often ends in loss. In mines, and particularly where the number of shares is small, in consequence of a sudden demand, and without any improvement in the property, the shares rise in price, and maintain their figure just as long as the demand continues; and, on the other hand, shares very often go down in market value in consequence of a larger number of shares being offered for sale than there are buyers for, notwithstanding that the mine may continue its usual productiveness. It is impossible in such cases for the investor to know how to act without the aid of some experienced agent. From the present state of the market we may judge that a large amount of capital is daily being invested in mining, the consequence of which is that those shares which are most in favour have advanced in some cases to more than double the price at which they stood previous to the reduction of the Bank rate, and those persons who were fortunate enough to buy at the low price have, or can at any moment realise a very handsome profit on their outlay. There are, however, many mines, with more than ordinary prospects of success, that have received but little attention, and although the shares are now at a nominal price a slight demand in the market, or a further improvement in the prices of tin and copper, would place them, perhaps, several hundred per cent. above the present quotations. These are the mines from which the earliest and most considerable profits may be expected, a careful selection of which being made by an experienced agent would, without doubt, prove very remunerative to the investor.

Great St. Helen's, London, Sept. 6.

DEEP AND SHALLOW TIN MINES.

SIR,—The sound practical advice given by your highly esteemed correspondent, Mr. Charles Thomas, in last week's Journal, will receive that attentive consideration which his honourable position and great experience so surely justify. Now that the recovery of the markets has inaugurated a favourable time for investing in British mining, and especially tin, he gives, as the result of his experience, the well-timed counsel to select, as a rule, young and shallow tin mines, rather than old and deep ones, and there cannot be a doubt that (with a very few exceptions) the suggestion is sound. Shallow mines are much better able to battle successfully with the fluctuating market of the present day, and realise much larger profits, compared with outlays, when prices are given—that is, presuming, of course, that the ore is forthcoming, and tolerably regular.

Perhaps there is no young tin mine more honestly worthy of the attention of those who take an interest in such matters than Furze Hill Wood, at Horrabridge, near Tavistock, recently brought into such painful notoriety by the sad accident which cost the lives of several poor fellows. Previous to that sad event the very existence of the mine was, perhaps, little known to the general public; but had not the accident occurred, the mine, which is such an excellent introduction into polite society, would, probably, ere this have brought it into general notice. The adventurers had found their efforts nobly seconded by the regular and increasing returns from the mine, that they were working quietly on, content to enjoy their seclusion, until that dividend state, which seemed then so imminent, forced notoriety upon them.

The accident came, and caused expenses and delays which have placed everything, for the time, under a cloud. But this very fact makes Furze Hill Wood even more worthy the attention of investors who really understand mining, inasmuch as it affords opportunities of becoming shareholders at nominal terms, which did not exist before, and will not exist a short time hence.

Those who are interested in tin mining would be amply repaid by a visit to the mine, if only as a matter of curiosity, to see how, on the valuable new ground just added to the lease, the ancients have sunk numberless shafts and pits, and carried away vast quantities of tin. They can also there learn of what superior quality the tin is, and how well the mine has done, and will do again when it has tided over its present unforeseen difficulty.

Sept. 6.

THE COPPER TRADE, AND ITS PROSPECTS.

SIR,—Under this heading I see a letter in last week's Journal, signed "Observer," referring to the probable new fields for copper mining in North Lancashire and Cumberland. I happened very lately to be moving about through Cumberland and part of the South of Scotland, bordering on the Solway, a most remarkable geological district of country, and, in a very obscure place on the seashore, near to the village of Auchencairn, I found some mining operations going on. At this moment I forget the name of the proprietor of the estate, which embraces on its surface some very remarkable appearances, so treasured by miners; hills of considerable height, probably 300 ft., rise rapidly from the sea-board, together with the close proximity of granite to the clay-slate; while the line on the actual shore, and in a portion of the cliffs, are porphyritic and conglomerate, changing, though very suddenly, to clay-slate towards the east. Here, in a valley lying between two of the hills I have referred to, a shaft has been sunk, and an adit is in progress of driving from the seashore. It was quite a surprise to come upon such a seam during our walk; and, as the climax to the interest excited in our minds by the general features of the locality, the manager or captain gave us a very intelligent account, and pointed out to us the surface appearances which led to the discovery now prosecuting. The depth reached is but little—some 12 or 13 fathoms, he told me—but certainly the heap of ore he called our attention to did astonish us. My friend's knowledge of such matters led him to the conclusion that the produce of this ore would be probably from 20 to 25 per cent. Some samples, a few of which were permitted to take, would far exceed this. If this mine produces a large quantity of ore, as the extraordinary produce at this depth (it came, we were told, from the driving towards the west, at 12 fms. of depth) promises, it will open up an important field for enquiry for mining men in this remarkable district of country; and I feel convinced, from all we saw here, there is very much to be learned about it.

We were informed it had been undertaken by a few individuals, and not by a company. The place itself is called Belcary, and I fancy you will hear more of it, or I am much mistaken. The entire coast line, which we traversed from thence to Port Mary, a charming spot, to the town of Kirkcubright, is well worth the geologist's examination.—Sept. 4.

PEDESTRIAN.

PROSPECTS OF THE GWENAP DISTRICT.

SIR,—Since my last there has been a continued improvement in the market price of several mines which I have long since recommended to the public, among which may be noticed CLIFFORD AMALGAMATED, TRESAVEAN, and WHEEL ROSE. The former has risen in value since the beginning of last month about 20,000l., which is a small amount when the importance of the improved price of copper is considered. A further rise in the standard for tin, which is considered inevitable, will make a difference in the money returns of more than equal to a dividend of 10s. per share bi-monthly, or 25 per cent. per annum interest on the present price of shares; and in a mine of such magnitude, with a large staff of workmen employed, discoveries are constantly being made—indeed, there are points to come off in a short time which will tend further considerably to enhance the value of this great property—but, without reference to its prospective merits, enough has been shown that the present is a very favourable time for the investor to make a purchase. A considerable enquiry has sprung up for TRESAVEAN shares at an advance, but holders will not part with their shares, and stock is very difficult to be obtained, which is not to be wondered at, when the more than ordinary prospects of a rich mine are taken into consideration; but, having fully alluded to this mine in previous communications, I am content to abide the result of the trials now being made for its proper development, and I advise those who have gone into it through my recommendation not to be tempted to part with their shares by the offer of a small profit, believing, and judging from analogous circumstances, that before long one of the greatest deposits of copper that has been discovered in the county for a considerable period

will be laid open. WHEEL ROSE I have often advocated as being a good mine, under management second to none in the county, and I am glad to see that the public, before putting their money into mining, are governed in a great measure by the ability and judgment displayed by those who are entrusted with the conduct of operations. But few mines in the county have had a greater rise in market value since the reaction has set in than this, which amounts to more than 100 per cent., and I attribute it entirely to the public preferring to entrust their money in the hands of parties qualified by business capacity, as well as the one-sided qualification too often called by the misnomer of "practical men." One little instance among others which have lately come under my notice may suffice to show the policy of appointing properly qualified men for the carrying out of mining operations, is that of a "halvanor" (the meaning of the word being well known to every one connected with mining) having returned 25 tons of ore in two months from the refuse thrown over the burrow, after being dressed under the supervision of those in authority. I need not, therefore, inform those who are acquainted with mining that it is impossible the shareholders can ever receive their proper quota of the returns from such a mismanaged concern, however much ore is being sent to market; and in all my recommendations to the public I make this a point of major importance, believing it as much impossible for mines to succeed without proper management as any other business.—St. Day, Scarrier, Cornwall, Sept. 5.

CHARLES BAWDEN.

THE SLATE TRADE IN THE UNITED STATES—No. II.

SIR,—Resuming this subject, according to promise, perhaps I should here speak of some of the difficulties this class of roofing material has had to contend with in America. In Europe slate has long been regarded, and justly so, as of the first importance for roofing purposes; but to introduce slate upon a large scale in America was an undertaking which entailed much time, argument, and perseverance. Every class of invention to the same end soon rallied their hosts, and made war upon the stranger, sparing no persuasive pertinacity in order to drive every vestige of commendation in slate (so well known to the Old World) from their soil. Many novel and imperfect discoveries, purporting to be some grand invention, have every now and then arisen to supersede the use of slate. In some cases, the public, until recently, have been duped by the adoption of the new compound, which has been chemically or otherwise prepared—the salesman, of course, setting forth as the chief recommendations the strength and durability of the article to be sold. It may be said with truth that hitherto the art of chemistry and the inventive faculties of the human mind have failed to supply the market with an article for roofing in any way comparable to the convertible slate-rock, which nature yields in great abundance. Those opposed to the use of slate in America have done their best to engender a suspicion in the public mind to the effect that a difference in the colour of slate indicates indurability. As in this country, so in America slate deposits vary a variety in colour; the opponent on the other side of the Atlantic adduced no evidence in support of his theory, but simply made the unqualified statement that "red and grey slates are not lasting," and vainly predicts their decay and utter decomposition in from 15 to 20 years. Nothing could be more absurd than giving publicity to such extravagant notions. Had they consulted the book of experience they might have known that the red and grey slates have served as an effective covering for ages past, and, from careful inspection, there is every probability of their lasting for ages to come. Again, the changes of colour which now and then take place in slate quarried near the surface has been made a pretext of, as indicating indurability. As with the red and grey slate so with these—their "endurance of weather" has long placed this question beyond dispute; the slight variation in colour is only named by persons "more nice than wise"—an hypothesis unnamed by our European customers. Space here forbids giving an opinion as to the cause of this change; still it will be sufficient for our purpose to observe that, providing discoloured slates are manufactured from the same bed or vein as those of greater depth, the mere change in colour will not materially affect the fact of their durability; the greatest misfortune in the future will be against the manufacturer—their lasting too long. Having disposed of the principal objections to the use of slate, I would here make some remarks on the classes of slate-rock as discovered in the State of Pennsylvania. A very large range of what we call hard rock passes through the county of Northampton. The band varies from $\frac{1}{4}$ to $\frac{1}{2}$ in. in breadth, and from 2 in. and upwards apart from each other, and crosses the grain in a manner to yield additional strength to the slate. The slate-rock itself is very pure; still the bands greatly differ in the admissibility of cleavage, as by far the greater number of bands passing through this range of slate-rock are composed of bastard flint and slate, and though in some cases the cleavage is wrought, the slates are coarse, and of second or third quality, when compared with such quarries as Chapman's, on the same range. No make of slates on the coarse part of this large seam has ever been profitable to the adventurers, and I venture to say they never will. The fine, close texture bands in the Chapman Quarry, if there is any difference, work more freely than the pure rock itself; thus, while the proprietor has the pleasure of rendering a superior article for the market, he gains for himself a high recompense in the shape of profits as the result of his superior knowledge of this class of deposit, and has the good fortune of securing to himself and his successors a property that will continue to yield for ages increasing returns. A second range of slate-rock is what is called the Delaware and Lehigh, or Mountain Range—so called because the veins extend, though interruptedly, from beyond the Lehigh River on the south-west, along the foot of the Blue Mountain, beyond the River Delaware, a distance of more than 20 miles to the north-east. This range is not so tractable as the one mentioned above; at some places it runs so deep that not the least trace of it can be seen for many miles, and often where a protrusion is seen it is quite out of the line proper. These slates, both for smoothness and cleavage, closely resemble the Ffestiniog slate of North Wales; but, as there are a number of veins in this range, there is, consequently, a wide difference in the quality and yield of slates; in proportion to the depth of the workable slate-rock from the surface so will be the capital required and the profits yielded.

Pennsylvania Quarry, mentioned in my last, turns out good slates within 10 ft. of the surface, the whole estate presenting the most conclusive evidence. The same results may be expected throughout the entire length of the property. The slates, being in quality No. 1, will find a ready sale.

JOSEPH KELLOW.

Dorothea West, Nantlle, Carnarvon, North Wales.

HINTS TO INVESTORS.

SIR,—Presuming that we are approaching towards a period when money will be again abundant, I wish to call attention to an "absorbent" by means of which, and especially in seasons of abundance, hundreds of thousands of pounds of good English money are annually abstracted from the pockets of confiding and not over-cautious investors, and the greater part of those immense sums are not only in most cases entirely lost to English enterprise, but in many cases (I am afraid only too many cases) tend to help creating competition with such enterprise, being also sometimes used as magnets to draw still more cash from British pockets. I allude to foreign mine speculations on unsound bases. Far be it from me to discourage by a single breath the noble spirit of enterprise which has constituted Britain the focus of the developing causes of the mineral wealth, we may say, of the entire globe; but I trust that everyone who opposes and exposes what may be called illegitimate mine enterprises promotes by so doing legitimate ones. Past experience testifies, and the future experience will bear out the truth of the—let us call it—rule that outsiders should never invest any money in any foreign mine speculation where (say) more than one-twelfth (of course, there are exceptions to that rule, easily discernible to careful enquirers) of the capital is to be spent otherwise than in actual working expenses. By following the above rule, hundreds of thousands of good English sovereigns will be prevented from flowing into the pockets of seedy foreign "mine proprietors" and spurious "promoters"; while, at the same time, real bona fide concerns, financially soundly, and well got up, will not at all suffer, and honest foreign mine proprietors and bona fide promoters will be liberally paid and recompensed; while, it is to be hoped, a balance of the money thus saved from irretrievable loss may find its way to encourage home enterprise, which, especially now, furnishes quite sufficient food for any amount of spirit of speculation. Take for example sinking for coal beds in strata where they are only suspected to exist, mining in imperfectly developed districts, &c. Mining has been looked upon and blamed, very much in the same way as the salmon in "Pickwick" too often, and it is time to initiate a movement for reform and emancipation.

Sept. 6.

AN INVESTOR.

THE TRENCROM MINE, AND ITS PROSPECTS.

SIR,—My attention was directed the other day to a paragraph which appeared in some of our local papers respecting the proposed suspension of this mine. In that paragraph an attempt was to show that the mine could not be worked without a yearly loss of something like 2000l. Now, without attempting at present to prove the incorrectness of the above statement, I will give a few facts in connection with the mine, and the mining public may judge for themselves. This mine, then, has been making, for a considerable time past, a monthly return of from 10 to 12 tons of tin. The last sale, I believe, exceeded 12 tons. Still, it might be objected, of

what use is it to continue working even for that amount, if it is raised at a considerable loss? But let us examine the matter a little more closely. The stamping and drawing are all done by one small engine, the stamping occupying only 8 hours in 24, except from Saturday night to Monday morning.

Now, I would like to ask the managers of some of the best tin mines in the county what sort of a balance-sheet they would be able to present to the adventurers on account-day supposing they were limited to such a paltry machine-power as that? I am quite aware of the serious difficulties which our mine adventurers have had to contend with for a long time past in keeping the several mines in operation, and they well deserve our very best thanks for it. But if the continued working of our mine at a cost of about 1700l. per month, and the several employed, and Trencrom was to be the model for others to follow, the gloomy predictions of Mr. Merfield's letter would soon receive a literal fulfilment.

Sept. 4.

ONE INTERESTED.

EAST CARN BREA, AND ITS MANAGEMENT.

SIR,—A great deal has been said as regards the mismanagement of this mine by the late manager, but in looking strictly into matters the following will show what better the present manager has done. I think, Mr. Editor, the Journal shows at the April meeting of shareholders a balance in favour of the mine of 716l. and 100l. advanced on tribute, making together 816l. In round numbers. The late manager left the mine at the end of May; during this month he sold about 1177l. worth of copper ore, and about 48l. worth of tin ore, against a cost of 716l. 7s. 3d., leaving a surplus profit, when he left the mine, of 100l. 18s. 4d. for the shareholders. The present manager took his place in June, and the accounts presented at the last meeting show copper ore worth 1000l., and the cost of upwards of 1000l., making a loss of about 42l. The sale of ores for July and August is about 1300l. against which 400l. of royalty is charged, but no other cost; then I will assume the two months' cost to be 1500l., which will make a loss of about 600l. Then, let us look at the present manager's report, in the Journal of last Saturday week. It states, "for the next two months we shall have sold 300 tons of copper, at a cost of about 1700l." In examining the past sales of copper ore, it is worth about 3l. 10s. per ton, on the average; at this rate 300 tons will fetch about 1650l., leaving a loss of about 700l. Under Capt. Glanville's management a balance in favour of the mine of 1847l., and the present manager a loss of about 1747l. Then the loss of 1747l. against the profit Capt. Glanville made, 1847l. The mine will be in debt at the end of October, if those reports and accounts are correct, about 358l. How much better are the shareholders off by the change of management? A PRACTICAL MINER.

GOLD MINING IN BRAZIL.

SIR,—If Mr. Günther had read attentively my letter of August 25, he would have discovered that instead of declining to accept his challenge of the 18th, I offered to double the amount, and should be content to lose it, provided he produced legal proofs that his accusations were true. Mr. Günther seems to be surprised at my saying—"Until I prove by proper authorities that such crimes were never perpetrated by any of the old company." I think such accusations as Mr. Günther was pleased to launch against us were quite groundless, and to demand evidence in the matter, notwithstanding Mr. Günther saying—"I ought to have eaten his charge of shooting down human beings like wild beasts, in quibbles; they were only a few calm words said in self-defence!" Mr. Günther's remarks on my having reaped handsome profits in the Montes Aurores Company, rather than my salary, is also untrue. I held a few shares from the commencement, and, on leaving that place, thought they were worth money, but from reasons never made known, they subsequently turned out to be almost valueless. Mr. Günther, preferring a clear conscience to hard cash, and on leaving that place freeing his slaves is praiseworthy. Such deeds of charity are nothing new; many others have done so before; but this is foreign to our subject, and has nothing to do with it. I now, Mr. Editor, beg to bid you adieu on this subject, for whatever Mr. Günther's propensities may further induce him to invent, I shall take no notice of for the present.

THOMAS MARTIN.

Cambrian Cottage, Dolgelly, September 4.

*A pressure on our space compels us to postpone several letters—among them, the continuation of Collieries and Colliers—Mechanism in Tin Mines—A "Colliery Engineer" on the Patent Laws—and, unavoidably, "Ex Officio" on the Dyfnwgan Mines.

Meetings of Mining Companies.

QUEBRADA LAND, RAILWAY, AND MINING COMPANY.

An extraordinary general meeting of shareholders was held at the London Tavern yesterday, Mr. WILLIAM SALMON in the chair. Mr. J. WRIGHT, C.E. (the manager), read the notice convening the meeting.

The CHAIRMAN having apologised for the unavoidable absence of the Chairman of the company, stated that the object of the present meeting was not to pass a resolution, but to inform the shareholders as to the actual position of the company, and to ask the counsel and assistance of the shareholders as to certain suggestions relative to the most advisable course to adopt for the future. The directors considered the re-formation of the company was absolutely essential, and might be very easily adopted without pressing hardly upon the shareholders, and yet give sufficient capital to make the valuable property remuneratively available. The great inducements for the company to take this step was, in the first instance, the enormous value of the mines, which had been more than established by corroborative testimony. The value of the Quebrada mine was incalculable, but in addition there was another mineral property of enormous value; but it was altogether unnecessary for this company to turn their attention to the latter mine, having in the Quebrada Mines occupation enough for, certainly, the lifetime of the present shareholders in realising its enormous resources. Upon this point Capt. Prince, the present superintendent of the mines, stated that "the company have a mine here which would be the same in comparison to the richest in Cornwall as the Great Eastern to a steam tug, to say nothing of the other mines, timber, and independent traffic." The next point was that which might be called its vegetable value, under which head he included the timber. They had a report from their resident medical officer, Dr. Huiberts, who was also a botanist, in which he stated that "I should like any information concerning the mode of preparing indigo. We have any amount of it growing wild here, and I think it could be turned to account, but I am ignorant of the mode of preparation. Other plants, which I will mention in my next, abound, and I am of opinion that above ground on the estate will prove in the future to be nearly as valuable as below. As this paragraph may seem very obscure, I will say in other words that in the course of time the vegetable kingdom here will prove an equal source of profit with the mineral." Another point of value was its land, which was capable of producing almost anything, and could be made available by carrying the railway through it, thereby rendering it of immense value; indeed, he believed a railway was the only thing that would make the estate what it really should be. At the meeting held in April it was suggested that a considerable expenditure should be made in the erection of smelting works; but since that period the directors had witnessed some very satisfactory experiments in the calcining of some of the ore brought from the mines by Colonel Stance. Having described the simplicity and inexpensive character of the process, he stated that a stack of 100 tons could be calcined in three weeks, the ore, by the arrangement, having the peculiar power of drawing to the centre the metal, while the unconsumed refuse was expelled, so that with an ore of 10 to 15 per cent. a regulus of something like 55 to 60 per cent. was produced. As to title, that had been satisfactorily settled. The last instalment of the purchase-money had not been paid, and in the agreement with Messrs. Bent, for the possession of the estate, it would be paid in three amounts—the first to be paid at the end of three years, the amount to be about 5000l. per annum. The company had its base of operations at Cacacas, perfect and complete, and also at Brava Island for the port of embarkation, and eight miles of permanent railway made, over which traffic had been carried at the rate of 40 miles per hour with perfect safety. There were also materials on the ground, and paid for, sufficient to complete some 16 more miles of the railway. It was proposed that the property, where the whole of the cross country could be tapped near to the river, in the very centre of the best timber, and nearly half-way to the mines—a comparatively small cost would complete the line to that point. Thereby colonisation would begin, and the land become of sufficient value to induce the natives to populate it, by which labour would be reduced. The scheme the directors suggested was this—145,000l. was required to complete the railway to the mines. They proposed to re-form the company, and to raise 68,000l. by issuing to every present shareholder 20 shares for every 100 shares now held, crediting each new share with 3l. 6d., thus leaving a liability of 2l. per share to be called up. If required, in quarterly instalments of 5s. per share. The remainder of the capital they proposed to raise by the issue of 20,000 shares of 5l. each to the public. If the public did not take them, the alternative would be to issue them to the shareholders, upon terms to be agreed upon by the shareholders at a special meeting. The directors would further have the power of issuing debentures, the additional advantage being that the line would be completed up to Palma Sola, and the whole of that district tapped, which would increase the value of the property to such an extent that many shareholders would be very glad to advance money upon debentures. During the two years, while the expenditure of the capital was going on, there would be raised and calcined some 4000 tons of ore, which would be of great value. They undoubtedly possessed a very valuable property, from which enormous profits could be derived, and from three distinct sources, and his earnest advice was to the shareholders to cling most tenaciously to it. He was not advising a course which he would not himself fully support, and if every shareholder did the same, he implicitly believed that, in the end, each would have his days made happy by the prosperity of the Quebrada Company. (Hear, hear.)

G. L. BROWNE (the late Chairman) most entirely agreed with the recommendation of the board for the reconstruction of the company, and moved a resolution to the effect "That the directors be requested to prepare and circulate among the shareholders a proposal for the reconstruction of the company, and to take such steps as may be legally necessary for obtaining their decision thereon."—Mr. RAWLINS seconded the proposition.

A SHAREHOLDER suggested the propriety of forming an independent company—to act in concert with the mining company—for the construction of the railway.

Mr. G. L. BROWNE said great credit was due to the present board for having secured a perfectly clear title to the property, but as regarded the suggestion of the directors, he would rather advocate the issuing of preferential shares.

The CHAIRMAN, in reply to questions, stated that the whole of the debenture money would be returned in full to the subscribers. He considered that the formation of a separate company for the construction of a railway would be too complicated, and at the same time his strong advice would be to the shareholders never to give out of their hands the power of transit, which was a point of the utmost importance. As to preferential shares, that should be the last resort, and were not necessary under present circumstances. Moreover, the proposition of the board would be very far better in the end for the shareholders, and certainly very much cheaper. Directly the railway was made up to Palma Sola he believed a large revenue would result to the company from sources independently of the mines—that is, from land and timber.

Mr. CONSL HEMMING enquired of Col. STANCE the cost of preparing the roads for the use of traction-engines?—Col. STANCE replied that the roads might be bridged, which would cost 400l. per mile, the clearing 1500l., and forming 1000l.

and other additional, but necessary, works would be something like 7000, per mile, or (say) 40,000, for the 50 miles; traction-engines could then bring down ore for 10s. per ton.

Mr. CONSL HEMMING contended that course should be adopted forthwith, for the road thus made could be utilised subsequently for construction of a railway. Colonel STRANGE, though admitting that the traction-engine scheme would have been the best had it been adopted in the first instance, yet the property was of that enormous value that eventually a permanent railway would be absolutely necessary. He further stated that the traction-engine scheme had certainly not been rejected, but he could not say it would be adopted.

The CHAIRMAN, referring to the traction-engine scheme, stated that Mr. Crosskill, the manufacturer of traction-engines, in the presence of the board, gave it as his final answer that he could not state it would be a success for this company. Having referred to Mr. Consil Hemming's connection with the company, the CHAIRMAN mentioned that there was one of the engines in Venezuela which could not be used, and that two had been sent out to India and placed in the hands of Government authorities, and were now lying on the banks at the Ganges in a perfectly useless condition. They had also been tried in the Government dockyards of this country, but were not of the best in use in a single instance. He (the CHAIRMAN) then put the resolution, now in use in one instance, to the vote. Mr. Rawlins, who was carried, as moved by Mr. Brown, seconded by Mr. Rawlins, which was carried unanimously. A vote of thanks to the Chairman terminated the proceedings.

BRITISH SLATE COMPANY.

A general meeting of shareholders was held at the offices, King William-street, on Sept. 1.—Mr. JOHN ROBINSON in the chair.

Mr. JOHN A. L. BARNARD (the secretary) read the notice convening the meeting, and the minutes of the last were approved. The balance-sheet, made up to July 31, showed a balance of profit and loss of 31000, 13s. 6d.

The report of the directors stated that the progress of the company during the year has been of the most satisfactory character. The Vron Quarry has progressed to a very considerable degree. An additional area of rock has been cleared, and during the past year no less than 126,628 tons of rubbish have been removed, which tends to the great point of obtaining a large area at the bottom of the quarry, under which lies slate rock of the finest quality, which the directors have hitherto carefully abstained from working. This rock, in fact, forms a great reserve for the future. However surprising the results obtained, they are only an earnest of what they will be when the proposed works and clearings are completed, as any further expenditure on capital account will then be closed, the slates made at one-half the present cost, and profits more than doubled. To this reserve there are no known limits; the depth to which slate rock extends has not yet been discovered, and in the neighbourhood in which this quarry is situated others have already been worked to three or four times the depth to which the Vron works have been carried, and the deeper the slate rock goes the finer and purer in quality it becomes, besides affording greater facilities for working. The incline has been completed from the top of the quarry to the bottom, the engine fixed, and engine-house finished. The engineers have undertaken to have the engines and machinery working by Sept. 5. This will be of great assistance, and much facilitate the operations, in more rapidly clearing the rubbish, and in reducing, in several important items, the cost of production. The company cannot help considering it a matter of great regret that they were not enabled to make the tramroad from this quarry to Carnarvon, as any increase in the production of slates increases the difficulty of carriage. The importance of some steps being taken in this matter may be estimated from the fact that, at the present rate of slates made at this quarry, the cartage alone costs about 13000, per annum, and tramroad communication would result in a saving of at least 7000, to 8000, per annum, and a proportionately greater reduction in cost as the manufacture of slates increases. It is a difficulty that must be met, and that certain steps must be taken before the slates reach a point of production beyond the present means of conveyance.

Cwm Eglia Quarry.—The funds required for the large works necessary for the satisfactory commencement of operations at the Caedryn Quarry have necessitated the temporary suspension of further improvements at Cwm Eglia. Some additional machinery has, however, been set to work, and slabs have been manufactured most satisfactorily, and those turned out have met with a ready and immediate sale, at good prices. Further machinery is at once required to meet this demand, and the directors will, it is hoped, be able in a short time to turn out a large amount of slabs monthly. A steam-engine is also under contract to be erected and complete by the end of September. The works at the Caedryn Quarry will also greatly help and facilitate those at the Cwm Eglia Quarry, as extra machinery will be erected, so as to work up any surplus rock that the machinery at the latter quarry may be unable to deal with.

Caedryn Quarry.—The contractor for the works has undertaken to have them ready by the middle of September, and there is no doubt, judging from the advanced state of the works, that the quarry will be in full operation in that month. The great advantage has been secured of an ample supply of water, without necessitating the construction of large and costly reservoirs, which would have involved an outlay of many hundreds of pounds, and even then with a liability to scarcity of water during continuous dry weather. The directors have to congratulate both themselves and the shareholders on the approaching completion of those works, which, it is anticipated, will double the manufacture of slates in that district.

The directors take this opportunity of acknowledging and thanking the shareholders for the encouragement and support they have received on all sides, which has placed the directors in a position to maintain intact and unquestioned the credit of the company. The directors have thus been enabled to meet all the engagements of the company, without having to borrow either by the issue of debentures or by loans of any description, and the importance of maintaining this high position cannot be overrated. The directors are glad to state that the machinery, plant, and working stock of every description are in the best condition, and in a state of the greatest efficiency. The same applies to the Caedryn tramroad, wharves, &c. The demand for slates is very large, with the prospect of a further rise in price at the beginning of next year. The orders at present in the hands of this company are far beyond the largest supply that the quarries are producing at present, and a great many orders have had to be refused. The directors have great satisfaction in pointing out the results obtained by the operations carried on during the past year—that while in the year ending July 31, 1865, the slates made and sold at all the quarries amounted to about 54000, the slates made and sold in the year ending July 31, 1866, amounted to about 120000. The balance-sheet for the past year shows a most satisfactory result, and the amount to the credit of profit and loss, after providing for the half-yearly dividend paid in March and April last, justifies the directors in recommending a dividend upon the preference shares at the rate of 9 per cent. per annum for the half-year commencing Feb. 1, upon the amount then paid by the shareholders, as also upon such sums as have been received on account of shares from that period to July 31, from the respective dates of payment.

The report concludes by stating that if the improvements and plans proposed are carried out they feel convinced that the present is but a step in the increasing prosperity of this company.

The CHAIRMAN said the directors had much pleasure in again meeting their fellow-shareholders, and he was glad to see so many of the large shareholders present; the fact was that out of some 180 shareholders a large number resided in the country, at a considerable distance from London, and when at these meetings, they could only have a considerable inconvenience, but also considerable expense. It was hardly fair to expect that all would or could attend, and it was for that reason the directors determined in the first instance to issue in their reports full details of the works and progress of the company, and he really thought this much the best plan. These detailed reports were in the hands of all the shareholders some days before the meetings, and an opportunity was thus given them of carefully reading and examining the reports, so that if any shareholder who found it inconvenient to attend the meeting saw any matter requiring explanation, he had an opportunity of either obtaining it before the meeting, or failing that, he had still the opportunity of attending the meeting, and making the enquiry personally. The result was, instead of a meagre report, to be subsequently followed by a long and explanatory speech from the Chairman, the report explained itself, and instead of a speech from him, he really had nothing to make a speech about; he was not sorry for that, as he very much preferred working to talking. He would be very glad to give any explanation or information that the shareholders present may think desirable, and the report now before them, so far as he knew the affairs of the company, was a fair and straightforward account of its position and prospects, and he had much pleasure in moving its adoption. Mr. W. TUXFORD seconded the motion.

The SECRETARY, in reply to a question from Mr. W. Ashton, stated that the liabilities had been reduced 35000, since the issuing of the report.—The CHAIRMAN explained, with reference to the amount of unpaid calls, that this was owing to the call falling due a few days only before the books were made up, but a greater portion had since been paid.

Mr. INCHBALD wished to know whether there was any probability of the tramroad being made to Carnarvon?—In reply, the CHAIRMAN said that to a great extent the construction of the tramroad depended upon the shareholders themselves; it was a matter of very great importance to the company, and the directors intended again to make application for an Act of Parliament for that purpose.—Mr. WARDROPER said that although he had always entertained most favourable opinions of the property, the result of a personal visit had more than confirmed the views he had previously entertained. The amount of steady profits the shareholders would eventually realise would be regulated only by the extent to which the workings were opened out. Those shareholders who had not visited the property could form no conception of its enormous extent and character. When visiting the property, a few days ago, he found the whole of the works going forward with that energetic determination which should characterise a large company of this description; the new works and operations were being rapidly constructed for the further development of the property. He saw one building alone at Caedryn constructed, in which it was intended to place no less than eight of Hunter's machines, besides planing machinery of every description. He felt quite convinced that after seeing the property every shareholder would be thoroughly satisfied with his investment. He thought the directors had done a very wise thing in limiting the dividend to 9 per cent., as the residual profits has been most advantageously employed in the necessary works, and great credit was due to the managers at the quarries, who were most practical, efficient, and hard-working servants of the company.

Mr. PABLEY had been informed that the famed quarry, known as Lord Palmerston's, had not reached the present position without an expenditure of nearly a quarter of a million of capital; and this was a circumstance that the shareholders of the British Slate Company should always bear in mind, seeing that they were the possessors of a property far more extensive, and much more valuable. The proposition adopting the report and balance-sheet was put and carried unanimously.

The CHAIRMAN said the next resolution he had to submit was with reference to the dividend, and therefore he had to propose that a dividend be declared upon the preference shares at the rate of 9 per cent. per annum for the half-year commencing Feb. 1, upon the amount then paid by the shareholders, as also upon the amount as have been received on account of shares from that period to July 31, from the respective dates of payment.—Mr. H. E. SULLIVAN seconded the resolution, which was carried unanimously.

Mr. INCHBALD proposed that Mr. John Robinson be re-elected a director of the company; and said he could not allow that opportunity to pass without stating that he had known their worthy Chairman for many years, during which his

cardinal characteristic had been undaunted energy and perseverance, which had met with that success it deservedly merited. He had much pleasure in moving the resolution.—Mr. C. A. THORN had much pleasure in seconding the motion, which was carried unanimously.

Mr. OILN WILLIAMS proposed, and Mr. WARDROPER seconded, a resolution that Mr. John Kirkham be re-elected a director of the company, which was carried unanimously.

The CHAIRMAN, in acknowledging his re-election, thanked the proprietors both on behalf of himself and Mr. Kirkham for their renewed mark of confidence. It was gratifying to him to know that the shareholders at a public meeting like the present gave such expressions of confidence in the directors, and he had not only to thank those present, but shareholders who, unable to attend, had been pleased to write him to the same effect. While it is not always in the power of directors to command success, yet in this company they had done and would continue to do their best to deserve it.

Mr. PABLEY then proposed—That the meeting desires to record its best thanks to the Chairman and directors for the energy and ability they have exercised in conducting the affairs of the company; and the meeting, in order to show its full and entire confidence in the directors, and in appreciation of their hitherto having declined to receive the attendance fees to which they are entitled, further desires to vote the sum of 3000, of which 1000 should be especially appropriated to the Chairman, and 2000, amongst the directors generally. He knew that the directors were largely interested, but that was no reason why their valuable services should not be at least acknowledged in a substantial way. There could be no doubt that they owed their success to the indefatigable industry and ability of their worthy Chairman. The proprietors had been receiving dividends for some time, but the directors had not only not taken but had declined the fees to which they were entitled by the Articles of Association. In speaking of this company, he had heard it said, by a party who was not a shareholder,—"How do you know that the dividends are earned?" He had thoroughly satisfied himself on that point, and the auditor had informed him that the directors had nothing whatever to do with determining the amount that had been earned. The books, papers, accounts, and vouchers were all handed over to the accountant and auditor, who made up the accounts, and settled the different balances, charging each item under the heads to which it was fairly chargeable; and it was they, the accountant and auditor, who settled the amount which was available as net profits for dividends. This was most satisfactory.

Mr. WARDROPER, in seconding the proposition, said that the proprietors could not continue to participate in the prosperity of the company without according some such vote, and certainly the amount proposed could only be accepted as a compliment, as he need hardly say it was wholly inadequate to the valuable services rendered.—Mr. H. L. MORGAN (the auditor of the company) had much pleasure in corroborating Mr. Pabley's statement as to the books and accounts, and the manner in which they were made up.—Mr. C. A. THORN said it had long been his opinion that the directors should receive some acknowledgment.

The CHAIRMAN said he should not like to put the proposition with reference to the vote to the directors, if a distinction was made with regard to himself. All the directors worked together, and had but one object in view; and, therefore, no distinction should be made.—Mr. INCHBALD knew that the Chairman devoted the whole of his time in the service of the company, either at the office or at the quarries, and that the success which was mainly owing to his energy. However, if the Chairman wished the 3000, to be voted amongst all the directors, there could be no objection to it, but he thought it a very handsome thing on his part.—The resolution was then put and carried unanimously.

The CHAIRMAN, on the part of himself and his colleagues, acknowledged the vote, stating that the directors would regard it as a high compliment, which they would not readily forget.

Mr. WILLIAM ASHTON moved, and Mr. THOMAS ROGERS seconded, a vote of thanks to the secretary, for his exertions in the service of the company, and for his courtesy at all times to the shareholders.—The SECRETARY returned thanks for the compliment.

Mr. INCHBALD proposed a vote of thanks to the auditor (Mr. H. L. Morgan), stating that some time since he had gone to him, as an entire stranger, respecting this company, and he had received every information he required in the most satisfactory manner; and he thought the best thanks of the shareholders were due to Mr. Morgan for the very able and independent manner for which he audited the accounts of the company.—Mr. BOND seconded the motion, which was carried unanimously.

Mr. MORGAN, in returning thanks to the shareholders, said he was glad to be able to bear testimony to the very excellent and efficient manner in which the books of the company were kept by the accountant; everything connected with the company was open to his inspection, and any information he required he obtained. He should always use his best exertions on behalf of the company.

Mr. JOHN WILLIAMS desired to bring under the notice of the shareholders the desirability of the company giving something towards the cost of the erection of a chapel at the Vron Quarry. The chapel had been built, he believed, by the workmen themselves, and there was a debt still owing upon it. The men had written to him, asking him to bring it before the meeting, and he had much pleasure in doing so, as he believed the company would be benefited by the men's conduct.—The CHAIRMAN stated that Mr. Williams had brought the matter under the notice of the directors, but they did not feel justified in using the monies of the company for that purpose without the consent of the shareholders. For his part he thought that if the shareholders made up their minds to expend any amount in that manner, which he believed they had, he believed, by the workmen themselves, and there was a debt still owing upon it. 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BRITISH MINES.

ing favourably, and without any change worthy of notice since my last. | was

GREAT WHEEL BADDERN.—R. Pryor, H. Tregoning, Sept. 1 : In the 75 fm. cross-cut, south of Hill Brothers engine-shaft, we have no material change notice during the past week ; the ground continues much the same, but the water penetrating with much greater force through every crevice and cross-head

11 fms. below the 30, and we shall now commence to cut ground for bearings, etc., in order to fix the lift at the 45; the shaft is still in a beautiful channel of mineralised ground, and have again set to nine men, to sink the same for 5 fms. certain, at 10¢ per fm.; and if the above work is completed, and the contract completed within two months from the 10th inst., the men are to have 10¢, 10¢, per fm. for the whole of the contract. After the lift

100

There is no doubt that in a short time they will come off successfully. The lode in the engine-shaft, the 80 and 72 west, and the 60 fm. levels are points of considerable interest; in fact, the 60 especially is opening up some

excellent ore ground for copper and tin. There are other productive points yielding fair returns.

ROSWALL HILL AND RANSON UNITED.—These mines, like most other tin-producing ones, will greatly feel the benefit arising from the improved price of the produce. The returns for the past quarter were about 30½ tons of black tin, notwithstanding that several levels had been suspended in consequence of the low price of tin ores. The lodes in many productive points have increased very much in value, but are at present showing very favourable appearances of an early change. There is a good lode going down in the bottom of the 170, which is being worked on tribute at 5s. in 11, estimated worth 25s. per fathom, and a winze in course of sinking below the 90 is worth 50s. per fathom. The other productive places are returning the usual quantities. Should tin continue to advance, and the suspended levels be resumed, there is every probability of the current quarter proving a profitable one.

JAMES LANE.

From Mr. EDWARD COOKE:—There has been almost an unprecedented amount of business done during the past ten days, and those who were fortunate enough to have made a selection of mines, and bought into them a few weeks since, can now realise very large profits. In many instances from 100 to 200 per cent. advance has taken place during the past fortnight in the market value of several mines, and as the course of the money market will, in all probability, tend downwards still, and remain low for a long time to come, it is not at all unlikely that mining shares will be yet further favourably influenced in price. There are several mines that are now selling at very low prices that will certainly rise considerably, and no time should be lost by those who wish to make certain profits. The metal markets are all rising, and this will secure to the shareholders in mines better prices, and consequently, greater profits upon the produce of metallic mines. Six mines could be named that appear to me to have an absolute certainty of rising enormously in price during the next few months; but they should be bought into at once while they are low. I prefer not mentioning them here, not from any misgivings as to the result, but for other obvious reasons. Leaving our home mines, I come to gold mines, and notwithstanding some of the disappointments that have been experienced hitherto, I am still of opinion that more than one of the gold companies that have been established during the last eighteen months will be thoroughly successful. Although too sanguine a view may have been taken as to the time required to erect the machinery at Chontales, yet nothing has transpired really to lessen the confidence of the shareholders in the richness of the properties in this company's possession. I have the fullest confidence in yet seeing Chontales one of the most successful mining companies in the world. The fully paid and royalty shares should be bought. Other gold mining companies I could name are well deserving of immediate attention, and by a judicious selection of a few shares in several companies respectively a very large profit would result. A dividend at the rate of 10 per cent. per annum has been declared on Hollybush Colliery shares. This is a cheap and safe investment.

From J. B. REYNOLDS:—Five per cent. is now the order of the day. The standard is still advancing, and everything looks as hopeful as possible. Now the popular investment is mining stock, and not without good reason either, seeing that the metal market is not likely again to be disturbed by any adverse influence for a long time to come. The change in Cornwall is truly great. Almost everyone you meet expresses his greatest satisfaction at the altered state of affairs, and mining operations are being gradually extended. At COOK'S KITCHEN, for instance, fifty more men have been put on, and the cutting of Duncan's lode good has caused an active demand for the shares. STRAY PARK (the adjoining mine) is, I think, almost certain to attract considerable attention, and for investment or speculation the shares should be bought. NORTH TREKERRY is reported to be looking remarkably well, and the shares in WHEAL ROSE are in great favour. I shall soon have to record a rise in many shares which, in the interests of my clients, I am closely watching. DALE MINING COMPANY (Limited): I take leave to draw notice to this. The shares are about 4s., sellers. Upon them there is no chance of a call. It is quite a "spec." It has been my lot to see the shares selling at 3s., and soon after at 2½s. The mine adjoins the celebrated Eton Mines, and is a fine property, and is being worked by the managing agent, Captain Joseph Vignall, of North Rose, one of the ablest miners in England. It is likely to add fresh lustre to his name by operations here. As soon as the few shares now offering are picked off the marketable value of the security will have a remarkable rebound. SOUTH CALLINGTON: I have often strongly advocated this as a *bona fide* investment. I do so again. The shares are likely to have a great rise, for reasons which I cannot at present put into print.

MINERAL RIGHTS ASSOCIATION.—The property conditionally acquired by this company seems to be one of great value. It has already been examined and reported on by Capt. James Barratt, a mining captain of very extensive experience, and known for his extreme caution. He says that the claim extends 5000 ft. in length and 900 ft. in breadth, into which two adits have been driven, about 16 fms. and 8 fms. respectively. These adits have been driven horizontally in a bed of conglomerate, having more than 40 ft. of backs, and at the bottom there is a layer of pebbles and clay, mixed with lime, forming a blueish cement from 3 in. to 18 in. thick, "the whole thickly impregnated with nuggets of gold, from the size of pigeon's eggs down to the size of peas. All the cemented conglomerate above the layer is thickly impregnated with gold." It is impossible to form an estimate of the yield of the bottom of the deposit, "as pockets or deposits have been met with at intervals yielding from 1000 to 1400, worth of gold, and that amount has been taken out in a few hours. This layer, when at its smallest size, yields gold to the value of from 20s. to 36s. per square ft." This channel of gold bearing conglomerate is the bottom of an ancient river, and can be traced for a distance of 200 miles, and Capt. Barratt says it "is being prosecuted or operated on in various localities, yielding immense profits to the shareholders." But with regard to the claim secured by the Mineral Rights Association, Capt. Barratt says it "is the nearest to the head of the river, consequently the gold is found in larger nuggets, and more abundantly than in any other mine on this metalliferous channel." Capt. Barratt thus concludes his report:—"There are two four-head stamps already erected and in operation: from the favourable nature of the mass or deposit, 30 tons can be stamped and amalgamated daily. I strongly recommend you to increase the number of stamp-heads to 50, and when they are completed 50 more should be erected immediately, as there is an inexhaustible supply of ore or conglomerate in the mine. The tree can be raised at a trifling expense, and immense profits can be realised if one-half of the stamping power I have mentioned were erected. The property is so situated that several stamps can be erected one over the other, as the water, which is abundant, comes in at a great elevation above the site of the present stamps. Timber for all mining requirements is abundant, and immediately on the property. Looking at the situation of this property, the facilities for working it, the abundance of water that can be obtained, the immense deposit of auriferous conglomerate, its richness, and the facilities for obtaining the same, I do not hesitate to say it is one of the best gold-mining concessions in California." The directors have instructed Capt. Barratt to proceed again to examine the property, and have also sent out Mr. John Arthur Phillips to meet him there. Should the representations made be confirmed, and Mr. Phillips believes that a large annual profit is likely to be obtained, he has power to conclude the purchase, and take steps to procure the necessary machinery on the spot, and go to work at once. It is important to note that we understand some mining companies in the same district as the above property are making profits to the amount of 12,000 monthly, and that many are making some 50,000 monthly. In fact, we have heard of one property, bought 10 months ago for 50,000, which will return its lucky shareholders the whole amount, with interest, the first 12 months. We hope this may be the case with the one acquired by the Mineral Rights Association.

CHONTALES.—The shares have risen during the week to 4½ p., being scarce. It is not unlikely that some gold will be received by the steamer due in the coming week, as some machinery was to be set to work in July. In the following months a good deal of gold may be looked for. Attention is being drawn to the fully paid-up (5s.) shares, which to many persons are preferable to the shares which are subject to calls.

QUICKSILVER IN AUSTRIA.—The Austrian Empire is one of the few countries producing the important article of quicksilver in sufficient quantities to allow of a large importation of it after meeting over demand of its own industrial establishments. The principal source of Austrian quicksilver is from the mines of Idria, in Carinthia. In 1864 the production for the whole empire was 3384 Vienna cwts., of which 3009 Vienna cwts. were exported.

ANCIENT SILVER MINES IN GREECE.—The silver mines of Sunium, after a lapse of 2294 years, are now worked by a French company, principally for the produce of lead. The works employ continually 400 workmen, and work seven furnaces. From 10 to 12 British vessels take the coal required, and bring to England cargoes of lead.

CRYSTALLISED STEPHANITE AND ARGENTITE FROM CORNWALL.—On a specimen of indistinctly crystallised argenteite, associated with filiform native silver, from an abandoned mine, the Wheal Ludcott, near Liskeard, I have observed some very characteristic crystals of stephanite, the melan-glance of the Germans. The crystals are very brilliant, and in short prisms, about 1½ lines long by 1 thick. Colour black, like iron-glance; streak black; before the blowpipe, on charcoal, yields no perceptible trace of arsenic, but deposits a sublimate of oxide of antimony; and with borax, yields a globule of silver. Though found in comparative abundance in some countries, it has not hitherto been recorded as occurring in a crystallised state in the British Isles, but is said to have been found massive and pulverulent at Wheal Duchy and Herland, in Cornwall. In the same locality specimens of argenteite have been found crystallised in well-defined cubo-octahedrons, nearly ½ inch in thickness. These are by far the largest crystals of this mineral yet discovered in Britain.—T. D.

CANADIAN COPPER.—A report has just been issued, made last month by a select committee of the Canadian House of Assembly, on the subject of the copper mines on the north side of Lake Superior and Lake Huron. The copper-bearing series on the north shore of Lake Huron extends over a surface of 2000 square miles, and nearly the same extent of country on Lake Superior is endowed in the same manner. It is thought not improbable that new surveys will prove that even this estimate is far short of the actual fact. Iron also exists in large quantity and of superior quality on the north-east end of Lake Superior. The land where the minerals are found is generally mountainous and rocky. The land best adapted for agricultural purposes is chiefly in the valleys of the rivers, and is of sufficient extent to support large settlements, but the opening up of leading roads is an essential condition of the rapid development of the country. The committee, therefore, recommend that land be granted to such persons or companies as are willing to construct railroads and open up country.

LONDON GENERAL OMNIBUS COMPANY.—The traffic receipts for the week ending Sept. 2 was 11,076l. 1s. 7d.

With the Mining Journal of last week a SUPPLEMENTAL SHEET was given, which contains several papers read at the British Association for the Advancement of Science—Steel Making: Mr. Mushet and Mr. Bessemer—the Coal Question: Sir R. Murchison—Coal Mining in Nottingham—Mr. E. Hedley on the Sinking of the Annesley Colliery—Steam-Boilers: Mr. H. Dircks on Steam-Boiler Investigation—Carrett, Marshall, and Co.'s Self-Acting Hydraulic Coal-Cutting Machine (illustrated)—Collecting Gases from Blast-Furnaces—the Statistical Returns of Copper Mining—the Discussion on Mr. George Addenbrooke's paper on the Utilisation of Blast-Furnace Gases, &c.

The Mining Market; Prices of Metals, Ores, &c.

METAL MARKET—LONDON, SEPT. 7, 1866.

| COPPER. | | | | IRON. | | | | Per ton. | |
|---------------------------|---------|-----|------|------------------------|---------------------------|----|----|----------|----|
| Best selected, .p. ton | 89 | 0 | 0-92 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tough cake & tile .. | 86 | 0 | 0-89 | 0 | 0 | 0 | 0 | 0 | 0 |
| Burra Burra | 90 | 0 | 0-91 | 0 | 0 | 0 | 0 | 0 | 0 |
| Copper wire....p. lb. | 0 | 11½ | — | — | — | — | — | — | — |
| Do. tubes | 0 | 12½ | — | — | — | — | — | — | — |
| Sheath. & bolts p. ton | 91 | 0 | 0 | — | — | — | — | — | — |
| Bottoms | 96 | 0 | 0 | — | — | — | — | — | — |
| Old (Exchange) .. | 77 | 0 | 0-80 | 0 | 0 | 0 | 0 | 0 | 0 |
| BRASS. | | | | STEEL. | | | | Per ton. | |
| Sheets | per lb. | 10½ | d. | — | Do. mch. Tynor Tees | 7 | 10 | 0 | — |
| Wire | 94½ | d. | — | Do., railway, in Wales | 15 | 0 | 6 | 5 | 0 |
| Tubes | 11d. | — | — | Do., Swed. in London | 10 | 15 | 0 | 11 | 0 |
| Yellow Metal Sheathing .. | p. lb. | 8½ | d. | — | To arrive | 2 | 16 | 0 | — |
| Sheets | 8½ | d. | — | Pig No. 1, in Clyde .. | 2 | 16 | 0 | 3 | 1 |
| SPELTER. | | | | STEEL. | | | | Per ton. | |
| Foreign | 20 | 5 | 0 | — | Do. Nos. 3, 4, f.o.b. do. | 2 | 6 | 2 | 7 |
| To arrive | 20 | 5 | 0 | — | Railway chairs | 5 | 10 | 0 | 15 |
| | | | | | Do. spikes | 11 | 0 | 0 | 12 |
| ZINC. | | | | STEEL. | | | | Per ton. | |
| In sheets | 27 | 0 | 0 | — | Indian Charcoal Pigs, | 7 | 0 | 0 | 7 |
| | | | | | In London p. ton. | 7 | 0 | 0 | 7 |
| TIN. | | | | STEEL. | | | | Per ton. | |
| English blocks .. | 88 | 0 | 0 | — | Swed., in kegs (rolled) | 14 | 0 | 0 | 14 |
| Do., bars (in barrels) | 89 | 0 | 0 | — | Do. (hammered) .. | 16 | 0 | 0 | 16 |
| Do., refined | 91 | 0 | 0 | — | Ditto, in faggots | 16 | 0 | 0 | 17 |
| Banca | 82 | 0 | 0 | — | English, spring | 19 | 0 | 0 | 23 |
| Straits | 81 | 0 | 0 | — | QUICKSILVER (p. bottle) | 7 | 0 | 0 | — |
| TIN-PLATES.* | | | | LEAD. | | | | Per ton. | |
| 10 Charcoal, 1st qua. | 1 | 10 | 0-14 | 0 | English Pig, com. | 20 | 0 | 0 | 20 |
| IX Ditto, 1st quality | 1 | 6 | 0-2 | 0 | Ditto, ordinary soft | 20 | 7 | 6 | — |
| IX Ditto, 2d quality .. | 1 | 8 | 0-1 | 0 | Ditto (WB) | 22 | 10 | 0 | — |
| IX Ditto, 2d quality .. | 1 | 14 | 0-1 | 0 | Ditto, sheet | 21 | 10 | 0 | 21 |
| IX Coke | 1 | 3 | 6-1 | 6 | Ditto, red lead | 23 | 10 | 0 | 24 |
| IX Ditto | 1 | 9 | 6-1 | 17 | Ditto, white | 27 | 0 | 0 | 30 |
| Canada plates, p. ton. | 13 | 10 | 0 | — | Ditto, patent shot .. | 23 | 15 | 0 | 24 |
| Ditto, at works | 12 | 10 | 0 | — | Spanish | 19 | 5 | 0 | — |

* At the works, 1s. to 1s. 6d. per box less.

* At the works, 1s. to 1s. 6d. per box less.

REMARKS.—On Thursday, at their usual weekly meeting, the directors of the Bank of England announced a further reduction in the Bank rate of discount to 5 per cent. We have thus in the course of three weeks come from the high rate of 10 per cent. to the moderate rate of 5 per cent.; and, as the former paralysed all commercial operations, and almost put a stop to business, so we shall find that the latter will give an incentive to all business transactions, and cause activity again to prevail. It is very satisfactory to find the Money Market thus becoming comparatively easy, as it will tend still further to promote that improvement in the metal trade which has now set in. It is true that during the past week prices of some metals have not quite maintained the position they took the previous week; but this is not to be much wondered at, as it is usually found that after so long a period of inaction as characterised the Metal Market for so many months, when a reaction takes place prices generally run up to a point beyond what they ought legitimately to have assumed; and consequently afterwards, finding that the demand is not so extensive as was at first expected, are unable to be maintained, and are, therefore, obliged to come to that which they ought properly to have presented at first. This has been the case now in the metal market; but though prices are in some cases not quite so high, yet a good steady demand is now setting in, and there is little doubt that ere long we shall find prices again going up, even beyond that at which they lately stood.

COPPER.—The demand continues very active, and prices have remained very firm at official rates; indeed, some business has been done at 3½ to 4½ above these rates, and one of the smelters has announced an advance in his make of 3½ per ton. There is very little doubt that this will soon become general, and that an advance will be declared by all the smelters ere long.

IRON.—In Staffordshire there is a steady though not rapid improvement in the demand, which is particularly experienced by the leading makers. The orders for India are generally much better, and the East Indian Railway Company is advertising for tenders for 17,500 tons of rails, and adding the chairs, fishing-plates, &c., want 25,450 tons, which will help to strengthen the trade. Pig-iron is selling more freely, and prices are firmer. The trade is still suffering from the low prices paid for manufactured iron in proportion to the high rate of wages, and the question of a formal reduction of prices, so as to recognise the actual decline, and with that of a reduction of wages, is being a good deal discussed. In Welsh there is more confidence evinced in trade than for a long time past, and there is a decided improvement, compared with a few weeks since. The reduction in the rate of discount has given the greatest satisfaction, and all parties are of opinion that the larger buyers, and the railway companies, who have been during the last two or three months steadily keeping back their orders, will now place them upon the market. The contracts during the past week were of a much better class, and more numerous than of late. In Swedish iron there is a rather improved feeling. In Scotch pig-iron, in consequence of the easier condition of the Money Market, and the prospect of a long continuance of the reduced make, a considerable improvement has taken place, and the speculative demand has been much stimulated, prices have continued to advance, and the last advices from Glasgow state the price to be 55s. 6d. cash.

LEAD.—The market continues firm at the prices last quoted, and a very fair business is being done.

TIN.—The position of the market for Straits, mentioned last week, has not been maintained, and the high prices then stated have not continued. Business was done at the commencement of the week at 83½ cash, and afterwards at 82½ cash, but lately it has further declined, and transactions have occurred at 81½ cash, which may now be considered the quotation. Banca has also declined to 82½ cash. The stock of Banca in Holland, on warrants, on Aug. 31, was 97,850 slabs, against 141,619 slabs same time last year; arrived towards next sale, 138,507 slabs, against 42,668 slabs same time last year. The stock of tin in London on Aug. 31 was 2762 tons, against 3410 tons same time last year, and the quantity of Straits about for Europe is about 1275 tons, against 1413 tons same time last year.

SPELTER.—Early in the week an improvement took place in this metal, and holders were asking 20½ 15s. for parcels on the spot; but this has not been maintained, as the demand has been less active, and holders have been obliged to accept from 5s. to 10s. per ton less, business having been done at 20½ 5s. on the spot, which is the present quotation. The stock in the port of London, on August 31, was 6628 tons, being a decrease of 180 tons during the month.

TIN-PLATES.—The demand continues active, and prices are firm. STEEL and QUICKSILVER remain as formerly.

BIRMINGHAM, SEPT. 7.—Rylands' "Iron Trade Circular" says:—Pigs inclined to greater firmness. Manufactured iron requires demand. Trade complains of undercutting in prices. Orders seem better for America.

THE TIN TRADE.—Mr. L. Th. van Houten (Rotterdam, Aug. 31) writes:—During the present month tin has been favourably influenced by the easier tendency in the money market, and a further advance in prices has been established. The principal feature to notice is the announcement of the autumn sale by the Dutch Trading Company. Banca declined to 46½ fl. in the early part of the month, but subsequently the market became more active, and improved to 48 fl. On the 29th inst. the autumn sale, comprising 109,300 slabs Banca and 700 slabs Billiton, was fixed to take place on Sept. 28. Billiton was in fair request throughout the month, and about 3500 slabs changed hands at 45½ fl. to 45¾ fl. The following

statement shows the position of Banca tin in Holland on August 31, from the official returns published by the Dutch Trading Company:—

| | 1866. | 1865. | 1864. |
|----------------------------|---------|---------|---------|
| Import in August.....Slabs | 19,187 | 16,208 | 9,919 |
| Total eight months..... | 154,562 | 131,968 | 111,307 |
| Deliveries in August..... | 11,525 | 32,383 | 55,520 |
| Total eight months..... | 110,755 | 99,993 | 123,559 |
| Stock second hand..... | 97,850 | 141,619 | 98,309 |
| Unsold stock..... | 136,586 | 127,668 | 17,393 |
| Total stock..... | 234,436 | 184,287 | 116,252 |
| Quotation, Aug. 31..... | 48½ fl. | 53¼ fl. | 60 fl. |

The preceding returns of the present year, compared with those of 1865, exhibit—An increase of the import for August of 92 tons, an increase of the import for the eight months of 712 tons, a decrease of the deliveries for August of 637 tons, an increase of the deliveries for the eight months of 628 tons, a decrease of the stock second hand of 1379 tons, an increase of the unsold stock of 2958 tons, an increase of the total stock of 1579 tons; a decline of the quotation equal to 8½ fl. per ton. The Government returns for the month of June are as follows:—

| EXPORT OF TIN. | | June. | Six months. |
|----------------------|-------|-------|-------------|
| | 1866. | 1865. | 1864. |
| Germany.....Tons | 127 | 72 | 109 |
| Belgium..... | 34 | 25 | 45 |
| England..... | 26 | 17 | 25 |
| France..... | 176 | 51 | 80 |
| Hamburg..... | 3 | 9 | 6 |
| United States..... | 10 | — | — |
| Other countries..... | 34 | 33 | 17 |
| Total..... | 410 | 210 | 282 |

According to the official returns, the import of tin for consumption in France has been—

| | 1866. | 1865. | 1864. |
|----------------------|-------|-------|-------|
| England.....Tons | 233 | 94 | 286 |
| Belgium..... | 3 | — | 10 |
| Holland..... | 289 | 77 | 200 |
| Other countries..... | 8 | 1 | 124 |
| Total..... | 583 | 172 | 620 |

Messrs. Von Dadelzen and North (Sept. 4) write:—We are glad to be able at least to report a very sensible improvement in this article. The immediate cause of the advance was the fact of the stoppage of several mines in Cornwall, and consequent thereon a great change in the action of the English smelters, who at once stopped sales of metal. As first they adhered to official prices, which was a virtual advance of 5½. This gave confidence both to consumers and speculators, who immediately commenced buying foreign. After a stand at 77½ for Straits, sellers withdrew for much higher prices, and the result was a rapid advance of July 7½ per ton. The Dutch Trading Company have announced their autumn sale for Sept. 28, in Amsterdam, which will consist of 109,300 slabs of Banca and 700 slabs of Billiton. The conditions will be the same as at the last sale, and no further sale will be held until the spring of next year. The quantity, though large, is about 600 tons less than generally anticipated, and this should have some effect; but we cannot get over the fact that the old stock in the hands of the Dutch operators, coupled with the quantity on sale, is sufficient for twelve months' consumption. The deliveries in Holland for the first six months of this year are more than double those of last year, and amount to 101,968 slabs, against 41,058, while our own have also been considerably in excess of former years, without, however, leaving any excessive stock in the hands of consumers. When we reflect that we have passed through a terrible financial crisis and a great continental war, and that we are at about the same price as we were before these disturbances happened, there is no great danger for the future in so far as regards our present prices, for they are not by any means high, while there is every probability that the spirit of speculation may be felt during the autumn, and an article like tin is sure to be a favourite. Our supplies from the East are likely to be very moderate for some time; the Dutch spring sale will probably be much smaller than the present one, and America, having sent us a very large quantity, both of Banca and Straits, may very soon appear here again as a buyer. Looking, therefore, at the position of the article in all its phases, so as to be able to judge what would be a fair value to give for Banca in the approaching sale, we are inclined to think that present prices are fair and reasonable, and that there is room for a further improvement during the next six months. The quantity of tin now afloat for England is 875 tons, and about 400 tons arrived but not landed, against 1318 tons last year, and to the Continent nil.

THE COPPER TRADE.—Messrs. Vivian and Younger (Sept. 7) write:—Business has not been so brisk this week as might have been anticipated, transactions being far from numerous. Prices have scarcely been maintained in second-hand lots of English or in foreign copper. The principal feature has been considerable purchases of ore and regulus by smelters, at 16s. per unit, which is the equivalent to 91½ per ton for tough, or (say) 5½ advance in the official quotations. The available stock of bars, ores, regulus, and English in Liverpool, Swansea, London, and Havre is thus estimated in fine copper:—Sept. 1, 1866, 18,786; Sept. 1, 1865, 16,526; Sept. 1, 1864, 17,384.

THE COPPER TRADE.—Mr. Pitten-Campbell (Liverpool, Aug. 31) reports:—The improvement indicated in our last has been very rapidly developed during the fortnight. On the 27th the smelters raised their quotations 6d. per ton, to 86½ for unmanufactured and 91½ for manufactured, and there is every indication of a further advance being near at hand. Ores, regulus, and bar copper have been in very active demand. The charters from the West Coast, advised by the mail of July 16, represent about 1000 tons fine copper, and the depressing accounts they would subsequently receive would, no doubt, delay the shipments from Chili and Bolivia during the first and second quarters of this and two previous years have been as follows:—

| | 1866. | 1865. | 1864. |
|---------------------|--------|--------|--------|
| First quarter..... | 13,339 | 13,105 | 15,844 |
| Second quarter..... | 10,258 | 13,487 | 9,729 |
| Total..... | 23,597 | 26,592 | 25,573 |

| Sales since our last issue been: | | | |
|---|------|------|------|
| Aug. 16.—50 tons bars, to arrive, per Oruro | 477 | 10 | 0 |
| Aug. 19.—544 tons ores, at Swansea, ex Tarapacca | 0 | 14 | 3 |
| Aug. 20.—120 tons bars, to arrive, per Oruro | 77 | 10 | 0 |
| Aug. 21.—67 tons bars, to arrive, per Ed. Preston | 78 | 0 | 0 |
| Aug. 22.—227 tons ore, at Swansea, ex A. Fisher | 0 | 16 | 6 |
| Aug. 23.—227 tons regulus, here, ex Zanga | 0 | 15 | 0 |
| Aug. 25.—430 tons regulus, here, ex Magellan | 0 | 15 | 8 |
| Aug. 26.—250 tons regulus, here, out of second hands | 0 | 15 | 0 |
| Aug. 28.—350 tons ore, here, out of second hands | 82 | 0 | 0 |
| Aug. 30.—125 tons bars, to arrive, out of second hands | 83 | 0 | 0 |
| Aug. 30.—50 tons bars, to arrive, per Santa Rosa | 86 | 10 | 0 |
| Aug. 30.—25 tons ingots, here, ex Sebastian Cabot | 86 | 10 | 0 |
| Aug. 30.—25 tons ingots, here, ex Egbert | 0 | 15 | 6 |
| Aug. 30.—200 tons regulus, at Swansea, ex Janthe | 0 | 15 | 6 |
| Aug. 30.—620 tons regulus, at Swansea, ex Wm. Leckie | 0 | 15 | 6 |
| Aug. 30.—230 tons regulus, here, out of second hands | 0 | 15 | 4½ |
| Stocks of copper produce in first and second hands likely to be available (Chili and Bolivia):— | | | |
| Regulus | 2035 | 2125 | 1650 |
| Ingots | 9345 | 7605 | 731 |
| Swansea | 600 | — | — |
| Cape | 250 | — | — |
| Australian | 3500 | — | — |
| Knockmahon | — | — | — |

Arrivals from the West Coast, S.A., during the fortnight:—

| | | | | | |
|----------------------------------|-----|-----|-----|-----|---|
| Spirit of the Morning, Papudo | 227 | 227 | 180 | — | — |
| At Swansea—Ann Fisher, Tocopilla | 227 | 227 | — | — | — |
| Tocopilla, Tocopilla | 539 | 294 | — | — | — |
| St. Helena | 361 | 286 | — | — | — |
| Cotopaxi, Caldera | — | — | — | — | — |
| Hercules, Guayaquil | — | 552 | — | — | — |
| Deerhounds, Bolivia | 660 | — | 349 | 183 | — |
| — | — | 1 | — | — | — |

Quotations are 15s. 3d. to 15s. 6d. for ores and regulus, 81l. to 82l. for bars, 87l. to 87l. 10s. for ingots, and 75s. 6d. (nominally) for Barilla.

against the company of 2907. 11s., and a loss of 1307. 3s. 3d. on the two months' working. The piece of ground so long in dispute with West Basset is described as having been laid open 90 fms. in length, and varies from 10 to 20 fathoms in depth, and can be worked from different points at a profit; but owing to the low standard it has been deemed advisable not to raise more ore at present than will meet the expenditure. In working the ground also it is more than probable that some discovery may be made. Great Retallack, 12s. 6d. to 15s.; the lode has been intersected in the cross-cut from new shaft 2 ft. wide, composed of priam, gossan, and soft spar, with stones of lead—a very promising lode for the depth. Great Wheel Vor, 25 to 26; Great Wheel Fortune, 5 to 6; Herodsfoot, 32 to 34; Marke Valley, 44 to 54; Mineral Rights, 12s. 6d. to 17s. 6d.; New Seton, 30 to 35; North Crofty, 25s. to 30s.; North Downs, 3 to 4; West Kitty, 5s. to 10s.; North Roskear, 3 to 5. North Treskerby shares advanced to 3 3/4, and leave off 2 1/2 to 2 3/4. Providence Mines, after being in demand, declined to 25s. 30. South Caradon, 300 to 325; St. Ives Consols, 6 to 7; Tincroft, 11 1/2 to 12 1/2; West Caradon, 6 to 7. Wheel Crebors have advanced to 15s., 20s.; the winze below the 90 is worth 3 tons of copper ore per fm. The 96 east end looks like improvement; and in the 84 east the cross-course, near which there was such a good lode in the 72, has been intersected. West Chiverton, 62 1/2 to 67 1/2; West Frances, 5 to 10; West Seton, 137 1/2 to 142 1/2; West Tolgus, 25 to 30; Wheel Basset, 82 1/2 to 87 1/2; Wheel Chiverton, 5 to 5 1/2. Prince of Wales have kept pretty steady, and leave off 23s. to 24s.; the lode was cut through in the 45 east end on Thursday, and worth full 307 per fm. In the 45 west, the cross-course was not yet intersected. Wheel Seton, 170 to 175; Wheel Rose, 12 1/2 to 15; Wheel Grenville, 25s. to 30s.; Wheel Trelawny, 9 to 11. Camborne Vein, 25s. to 30s.; the 135 east has considerably improved, worth 7 tons of copper ore per fm.; the winze below the 135, 1 1/2 ton; the 150 east, 2 tons; the 170, 3 tons per fm. East Lovell, 10 1/2 to 11 1/2; the slope in the back of the 45, east of the new shaft, is worth 207. to 257 per fm.; and west, 187 per fm.—South Lode: The shaft sinking below the 40 is worth 407. to 457.; the slopes in back of the 40 west, 307 per fm. The mine, the agent states, never looked better, and the more they open it the better it looks. Stray Park, 3 to 4.

On the Stock Exchange a good demand for Mining Shares has prevailed during the week. The following quotations were officially recorded in British Mining Shares:—Chiverton, 5 1/2; Clifford, 13 1/2, 14 1/2; East Caradon, 8 1/2, 9, 9 1/2; East Lovell, 10 1/2; East Wheel Russell, 3 1/2, 4, 4 1/2; Great Wheel Vor, 25 1/2, 25 1/2, 26, 25 1/2; Marke Valley, 44, 45; West Chiverton, 64, 65, 65 1/2, 66, 65 1/2, 64 1/2; West Seton, 150; Wheel Buller, 20; Great Laxey, 19 1/2 to 18 1/2; New Seton, 36; East Carn Brea, 24.—In Colonial Mining Shares the prices were:—Cape, 10 1/2, 10 1/2; Port Phillip, 1, 1, 1; Scottish Australian, 4; General, 19 1/2.—In Foreign Mining Shares the prices were:—Cobres, 5 1/2, 5 1/2, 4 1/2, 4 1/2; St. John del Rey, 49, 50, 48 1/2, 49, 49 1/2, 49, 49 1/2; United Mexican, 24, 24, 2; Chontales, 24, 24, 24, 24.

IRISH MINE SHARE MARKET.—The last reduction of the Bank of England rate of discount from 6 to 5 per cent. is considered here only a step towards still lower terms, which it is confidently expected will follow very speedily. Until this expectation is fully realised we are not likely to have a very active demand for stocks and shares of any description, unless influenced, as is the case with those of the Atlantic Cable Companies, by some extraordinary phase in the respective undertakings. Therefore, in the absence of any unusual bias, further than the well-established public confidence in the present and prospective value, and the excellence of the management of our leading mines, we have had rather a quiet week in the mining share market. Mining Company of Ireland shares, which left off last week at 227. 10s. to 227. 17s. 6d. (77 paid), held their ground firmly, and have even slightly improved, 234, having been paid for cash transactions, and the same price having been offered for account. For January they were, however, ineffectually offered for sale. Wicklow Coppers have been firm throughout, and realised a fractional improvement, they being now in demand at 247. for cash and account. Connors, after having for some time past been neglected at nearly 25 per cent. discount, have made a rapid upward movement from 15s. 6d., and last week's quotation to 18s., 19s. per share (17 paid). For the shares of the General Mining Company for Ireland 24, has been offered, but without success.

At Camborne Ticketing, on Thursday, 2303 tons of ore were sold, realising 9758. 4s. 0d. The particulars of the sale were:—Average standard, 1077. 2s. 0d.; average produce, 6 1/2; average price per ton, 47. 4s. 0d.; quantity of fine copper, 150 tons 5 cwt. The following are the particulars:—

| Date. | Tons. | Standard. | Produce. | Per ton. | Per unit. | Ore copper. |
|----------|-------|-----------|----------|----------|-----------|-------------|
| Aug. 2. | 3224 | 1077 | 6 1/2 | 47 | 11s. 6d. | 455 0 0 |
| " 3. | 1684 | 1077 | 6 1/2 | 47 | 11s. 6d. | 61 0 0 |
| " 23. | 3167 | 1077 | 6 1/2 | 47 | 11s. 6d. | 60 17 0 |
| " 30. | 2439 | 1077 | 6 1/2 | 47 | 11s. 6d. | 62 18 0 |
| Sept. 6. | 2303 | 1077 | 6 1/2 | 47 | 11s. 6d. | 64 19 0 |

Compared with last week's sale, the advance has been in the standard 27. 15s., and in the price per ton of ore about 3s. 6d. Compared with the corresponding sale of last month, the advance has been in the standard 97. 10s., and in the price per ton of ore about 12s.

At the Swansea Ticketing, on Tuesday, 1920 tons of ore were sold, realising 97309. 2s. 0d. The particulars of the sale were:—Average standard, 977. 5s. 6d.; average produce, 13 1/2; average price per ton, 107. 1s. 2d.; quantity of fine copper, 259 tons 4 cwt. The following are the particulars of the sales during the past month:—

| Date. | Tons. | Standard. | Produce. | Price per ton. | Per unit. | Ore copper. |
|----------|-------|-----------|----------|----------------|-----------|-------------|
| Aug. 14. | 900 | 977 | 13 1/2 | 107 | 13s. 1d. | 265 10 0 |
| Sept. 4. | 1920 | 977 | 13 1/2 | 107 | 14 1/2 | 74 10 0 |

Compared with the last sale, the advance has been in the standard 97, and in the price per ton of ore about 17 5s. There will be no sale on Sept. 25.

At the Providence Mines meeting, on Aug. 29, the accounts showed a credit balance of 7067. 15s. 10d. A dividend of 10s. per share was declared, and 1467. 15s. 10d. carried to next account. Capt. Hollow, Rogers, and White say:—"The mine, on the whole, is of the same permanent character as heretofore, and from present appearances will return the usual quantity of tin. In continuing our improvements in tin dressing we have reduced the number of hands on surface, and are increasing them underground; we have now employed on the mine 352 persons."

At Frank Mills Mine meeting, on Aug. 29 (Mr. W. T. Smith in the chair), the accounts showed a credit balance of 8181. 16s. Capt. J. P. Nicholls and J. and F. Cornish reported that they have 178 hands employed; but by the erection of an additional engine the returns could be considerably increased. Capt. Nicholls was instructed to look out for and the committee were authorised to purchase and erect such engine.

At Devon and Cornwall United Mines meeting, on Tuesday, the accounts for the three months ending July showed a debit balance of 5287. 12s. 8d., and a balance of liabilities over assets of 2897. 15s. 6d. Capt. Neil and Horsfield reported upon the various points of operation. They have excavated 114 1/2 fathoms of ground, and are employing 116 hands.

At New East Wheel Russell meeting, on Monday, the accounts for the six months ending July showed a debit balance of 2887. 18s. 3d., and a balance of liabilities over assets of 1427. 1s. 3d. A call of 1s. per share was made. Capt. J. Gifford reported that he considered the intersection of the cauter lode in the 20 a very favourable circumstance, and on the whole the appearances of the mine have improved since the last meeting. They have 20 tons of ore on the mine, worth, at present standard, 47. 10s. per ton.

At West Wheel Kitty meeting, on Tuesday, the accounts for the ten months ending June showed a debit balance of 4737. 11s. 1d., and a loss on the nine months' working of 4547. 19s. 11d. A call of 2s. per share was made. Capt. J. Vivian and Son and W. Thomas, Jun., reported that the prospects fully warrant the expectation of a productive and profitable mine.

At South Wheel Frances meeting, on Monday, the accounts showed a debit balance of 297. The ground which has so long formed a dispute with the West Basset adventurers, and has been confirmed to this mine by the recent decision of the House of Lords, may be described as presenting a triangle, with a side of about 355 fms., and a base of 5 1/2 fms. The ore ground which has already been laid open there can be wrought from different points, and at a profit, but owing to the present low standard for copper it has been deemed advisable not to raise more ore than will meet the expenditure until a further advance shall take place. In the working of the ground it is more than probable some additional discovery will be made.

At the Grenver and Wheel Abraham (special) meeting, on Wednesday (Mr. Calder in the chair), it was agreed to wind-up the company voluntarily, with the view to its reconstruction. Details appear elsewhere.

At Rosewall Hill and Ransom United Mines quarterly meeting the accounts showed a loss of 2787. 12s. 8d. on the three months' working, and a call of 1s. 6d. per share was made. There are several places looking very well, whilst in others the lode has fluctuated in value, but it is hoped that with the improved price of tin an important change in the financial position of the mine will appear.

At the British Slate Company meeting, on Sept. 1 (Mr. J. Robinson in the chair), the directors' report was adopted. A dividend was declared upon the preference shares at the rate of 9 per cent. per annum. Details elsewhere.

At Gellivara Company special meeting, yesterday (Mr. Smith in the chair), the resolutions, of which notice had been given, were passed, the object in view being to reconstruct the company, with a capital of 50,000 shares of 10s. each, those of the shareholders who had paid up their calls in full to receive in exchange an equivalent number of 10s. shares in the new company, to be credited with 4s. per share as paid.

At Quebrada Land, Railway, and Mining Company special meeting, yesterday (Mr. J. Salmon in the chair), the directors were requested to adopt and circulate among the shareholders a proposal for the reconstruction of the company. Details in another column.

At the Western Gas Company meeting (Mr. F. W. Russell, M.P., in the chair), the report stated that the reduction of 6d. per thousand cubic feet, which took place at Lady-Day, 1866, had effected a saving to the consumers of 10,000. up to Midsummer last. The meter rental exhibited an increase of 31047. over the previous year; in the returns for coke and products an increase of 17487. and the total income an increase of 48527. The divisible profits were 31,4287. A dividend at the rate of 10 per cent. per annum was declared, leaving 22627. to be carried forward.

At the United General Gas Company meeting, on Tuesday (Mr. R. Hudson in the chair), the report stated that the profits for the half-year amounted to 89497., which, added to 21447., made a total of 11,0937., out of which the directors recommended the payment of a dividend of 20s. per share, and a bonus of 2s. per share, free of income tax. During the past session the Dublin Bill for carrying out the arrangements with the Alliance and Dublin Gas Consumers' Company had received the Royal Assent; and at Liverpool there had been improvement. The Chairman said there was no difficulty in the way of carrying out the arrangements with the Alliance Company, and the works would be handed over on the 29th inst. Messrs. Hawkesley and Barlow had been engaged to value the company's property, and when they made their report the shareholders would be called together in special meeting to hear the result.

The Bank of England return for the week ending on Wednesday evening was highly favourable, the several items of the accounts indicating a rapid return to the healthy figures existing before the panic. In the ISSUE DEPARTMENT there has been an increase in the notes issued of 366,2757., represented by a corresponding increase in the coin and bullion on the other side of the account. In the BANKING DEPARTMENT there is shown on the liability side a decrease in the "other deposits" of 1,010,7507., from which must be deducted an increase of the "public deposits" of 641,4397.; an increase in the "rest" of 171,7247.; and an increase in the "seven day and other bills" of 41,6477.—854,8107.; leaving a total decrease on the liability side of 155,9407. On the asset side there is shown a decrease in the "other securities" of 711,6977.; and an increase in the "Government securities" of 515,3007.—196,3977.; leaving a total increase in the reserve of 40,4577.

COAL MARKET.—The fresh arrivals this week only numbered 95 ships. House coals continue short of the requirements of the trade, and business has been brisk at an advance of fully 6d. per ton, and in all is sold. Hartley coals have been steady, and without change in value. Hetton Wallsend, 22s.; Haswell Wallsend, 22s.; Hartlepool Wallsend, 22s.; Kelloe Wallsend, 21s.; Eden Main, 20s. 6d.; Hetton Lyon's Wallsend, 20s.; Tunstall Wallsend, 20s.; Hasting's Hartley, 18. Unsold *nil*; at sea, 40 ships.

COAL IN SHROPSHIRE.—After the patient and costly labour of four years, coal has at length been struck in the New Stafford Pits, near Prior'slee, on the line of railway between Wellington and Shifnal. The coal is of the description known as the double coal; the seam is 6 feet 3 inches in thickness, and lying perfectly horizontal, promises a rich field. At present the men are working through the yellowstone, ironstone, and yard coal, and from the geological characteristics of the district it is confidently expected that the blue and white flat ironstone, the flint coal, the pennystone, the sulphur, and other mineral strata of great value, will succeed in due course. The distance at which this coal has been struck is only 620 feet, but the cost of working the mine has, nevertheless, been considerable, from the unusually hard nature of the rock through which it has been reached. The works have been carried on under the direction of the Lilleshall Company, but it is understood that Earl Granville and the Duke of Sutherland are principally interested in the discovery.

NEW YORK, AUG. 23.—The condition of the iron market is much the same as last reported, the only new feature being a slight improvement in business. The market is still quiet, the demand being confined chiefly to small lots for consumption. The price of both Scotch and American pig-iron is very firm, and holders are not anxious to press sales. The furnaces are considerably in arrears of their orders, and are unwilling to make contracts for future delivery, except at rates then ruling. Bar-iron from store is rather more active. Stocks are not large, but well assorted. There has been no recent change in price. The copper market is very quiet, and only small sales have been made. Lead is also very quiet, with no transactions to report.—*Iron Age*.

India Office.

BY ORDER OF THE SECRETARY OF STATE FOR INDIA IN COUNCIL.

NOTICE IS HEREBY GIVEN THAT THE DIRECTOR-GENERAL OF STORES FOR INDIA will be READY TO RECEIVE PROPOSALS, in writing, sealed up, from such persons as may be willing to SUPPLY— FIFTY TONS OF CAKE COPPER.

And that the conditions of the said contract may be had on application at the India Store Office, Cannon-row, Westminster, where the proposals are to be left any time before Two o'clock P.M. of the said 10th of September, 1866, after which hour no tender will be received. GERALD C. TALBOT, Director-General. India Office, September 1, 1866.

Contract for Coals for Greenwich Hospital, &c.

CONTRACT DEPARTMENT, ADMIRALTY, SOMERSET HOUSE.

THE COMMISSIONERS for executing the Office of Lord High Admiral of the United Kingdom of Great Britain and Ireland, do hereby give notice that on TUESDAY, the 11th September next, at half-past One o'clock, they will be READY TO TREAT with such persons as may be willing to CONTRACT for SUPPLYING and DELIVERING into the Stores of the Royal Hospital and School at Greenwich, FIVE HUNDRED TONS OF COALS. The coals to be of the descriptions known as Stewart's, Haswell, Hetton's, South Hetton's, and Lambton's, and to be delivered by the 30th September next.

No tender will be received unless made on the printed form provided for the purpose, and which may be obtained on application in the Lobby of the Department of the Medical Director-General, Admiralty, Somerset House, where the conditions of the contract may be seen. No tender will be received after half-past One o'clock on the day of treaty; and it will not be required that the party tendering, or an agent on his behalf, should attend at the office on the day of contract, as the result of the offer received from each person will be communicated to him and his proposed sureties in writing.

Every tender must be addressed to the Secretary of the Admiralty, and bear in the left-hand corner the words "Tender for Coals for Greenwich Hospital, &c.," and must also be delivered at the Department of the Medical Director-General, Admiralty, Somerset House, signed by two responsible persons, engaging to become bound with the person tendering in the sum of £150 for the due performance of the contract.

By order, Registrar of Contracts and Public Securities. Contract Department, Admiralty, Somerset House, Aug. 30, 1866.

Coal Contract for the Spanish Government.

COAL CONTRACT.—TENDERS for the SUPPLY OF ONE THOUSAND TONS OF WELSH COAL to the SPANISH GOVERNMENT in FERNANDO PO, will be RECEIVED in Madrid by the Consulate Board of the Navy, on the 23d of September next, at One P.M. Sheet of conditions and forms of tender may be seen between Eleven and Three, at the office of the Royal Spanish Naval Commission, 31, King William-street, London, E.C.

Tenders for the Loan of £50,000.

TO FIRE AND LIFE ASSURANCE OFFICES, ENDOWMENT SOCIETIES, CAPITALISTS, AND OTHERS.—THE BOARD OF WORKS FOR THE GREENWICH DISTRICT are DESIROUS OF RECEIVING TENDERS for the LOAN OF FIFTY THOUSAND POUNDS, in one or more sums, repayable by instalments in thirty years, on the security of the Sewer Rates of the District. It is requested that tenders, stating the lowest rate of interest required, may be sent in to the Clerk's Office, Church-street, Greenwich, on or before the 18th of September next.

Further information may be obtained at the Clerk's Office as above. By order, JAMES WHEATLEY, Clerk to the Board. Greenwich, August 27, 1866.

LEAD, OR DEVON SHINING ORE, FOR SALE.—Apply to "W." Rudge, Lustleigh, Bovey Tracey, Devon.

INVESTMENT, LOAN, AND BANK AGENCY.—Established 1839. BANKERS—London and County Bank.

This Agency undertakes the Investment of Capital in British and Foreign Government Stocks and Joint-stock Companies upon advantageous terms; and devotes special attention to the selection of such Securities as pay good dividends, are readily convertible, perfectly free from risk or liability, and the most probable to speedily and permanently improve in value.

Every information afforded to Trustees and others, who seek investments of a strictly eligible and safe character. The Purchase and Sale of Advowsons, Annuities, Reversions, and Life Policies negotiated.

Investors may effect purchases in Stocks, Shares, and other Securities, subject to quarterly, half-yearly, or annual payments.

Loans granted on Public Securities having a market value, interest allowed upon deposits, and every description of Bank and Money Agency business transacted. CHARLES PETERS, Sec. No. 12, Clement's-lane, Lombard-street, London, E.C.]

M. R. THOMAS THOMPSON, MINING OFFICES, 12, OLD JEWRY CHAMBERS, LONDON, E.C. OFFICES OF THE GREAT LAXEY MINING COMPANY (LIMITED). THE SNAEFELL MINING COMPANY (LIMITED). THE EAST SNAEFELL MINING COMPANY (LIMITED). THE EAST LAXEY MINING COMPANY (LIMITED). THE REINIE LAXEY MINING COMPANY (LIMITED). THE CENTRAL SNAILEACH MINING COMPANY (LIMITED).

MESSRS. WEBB, WADGE, AND CO., MINING ENGINEERS, AGENTS, AND SHAREDEALERS, PLYMOUTH.

(Late Edwin H. Wadge, from Clarence Chambers, Manchester.) WEBB, WADGE, AND CO., occupying as they do a central position in the mining districts, will be enabled to acquire authentic information on all mining properties, and to advise their clients with the utmost correctness and punctuality. They will be also able to faithfully report the progress and exact position of the various mines in which their clients have embarked. The personal attention of our Mr. Wadge may be always relied on.

M. R. ERWIN HARVEY WADGE, F.G.S., of STRADBROOK HALL, BLACKROCK, COUNTY DUBLIN, finds it necessary to point out that he is NOT the Mr. WADGE of the FIRM of WEBB, WADGE, AND CO., of PLYMOUTH, with which he has NOT THE SLIGHTEST CONNECTION. This announcement is not made with any disrespect to, or prejudice of the respectability of, Messrs. Webb, Wadge, and Co., but purely to prevent such a confusion of persons as the extraordinary similarity of two names (the initials being identical) gives rise to.—Stradbroke Hall, June 21, 1866.

LEAD ORES.

| Date. | Mines. | Tons. | Amount. | Purchasers. |
|----------|---------------------------|-------|---------|-----------------------|
| Aug. 28. | Prince Arthur Consols, 29 | 113 | 2 6 | Sims, Williams, & Co. |
| 31. | Minera | 100 | 3 16 | Walker, Parker, & Co. |
| ditto | ditto | 92 | 11 16 | ditto |
| ditto | ditto | 80 | 11 16 | ditto |
| ditto | ditto | 48 | 11 16 | ditto |

BLENDE.

| Date. | Mines. | Tons. | Amount. | Purchasers. |
|----------|-------------|-------|---------|------------------|
| Aug. 31. | Minera | 102 | 3 14 | Bagillt Company. |
| ditto | ditto | 44 | 3 16 | ditto |
| ditto | ditto | 46 | 3 7 | S. Kenrick. |
| ditto | ditto | 20 | 3 17 | Bagillt Company. |
| Sept. 4. | Great Laxey | 300 | 3 0 | Vivian and Sons. |
| 4. | Gronant | 44 | 4 10 | ditto |
| 4. | Pool Park | 8 | 3 7 | S. Kenrick. |

BLACK TIN.

| Date. | Mines. | Ts. c. q. lbs. | Price p. ton. | Amount. | Purchasers. |
|----------|--------------|----------------|---------------|---------|------------------|
| Aug. 20. | Gt. Wh. Vor | 70 | 13 19 | — | £3546 0 10— |
| 31. | Pedra-andrea | 9 | 11 2 2 | — | 478 17 6—Bissee. |
| Sept. 1. | Wheal Uny | 9 | 9 2 2 | — | 447 6 10— |

COPPER ORES.

Sampled August 15, and sold at Swansea September 4.

| Mines. | Tons. | Produce. | Price. | Mines. | Tons. | Produce. | Price. |
|-----------|-------|----------|---------|--------------|-------|----------|---------|
| Cuba | 105 | 137 1/2 | £10 5 0 | Newfoundland | 90 | 11 1/2 | £8 4 0 |
| ditto | 104 | 137 1/2 | 10 5 0 | land | 89 | 11 1/2 | 7 18 0 |
| ditto | 103 | 14 | 10 7 0 | ditto | 74 | 20 1/2 | 15 1 0 |
| ditto | 101 | 14 1/2 | 10 4 6 | ditto | 39 | 11 1/2 | 7 15 0 |
| ditto | 96 | 14 1/2 | 10 3 0 | ditto | 10 | 9 1/2 | 6 14 0 |
| ditto | 70 | 21 1/2 | 16 3 6 | Ballycunnisk | 72 | 9 1/2 | 6 8 6 |
| ditto | 68 | 21 1/2 | 16 10 0 | ditto | 8 | 11 1/2 | 8 3 6 |
| ditto | 12 | 62 1/2 | 45 15 0 | Seville | 31 | 39 1/2 | 2 8 6 |
| Walleroo | 92 | 9 1/2 | 6 13 0 | ditto | 94 | 70 | 14 1 0 |
| ditto | 98 | 9 1/2 | 6 14 0 | Concordia | 24 | 17 1/2 | 13 1 0 |
| ditto | 98 | 8 | 5 7 6 | Peruvian | 24 | 82 | 24 7 6 |
| Cape Ore | 20 | 30 1/2 | 23 11 0 | Cobres | 12 | 20 1/2 | 15 17 6 |
| ditto | 14 | 26 1/2 | 20 15 0 | ditto | 1 | 28 1/2 | 21 7 6 |
| Kurlia | 13 | 14 1/2 | 10 14 6 | Californian | 78 | 17 1/2 | 13 2 6 |
| Berehaven | 99 | 10 1/2 | 7 4 0 | ditto | 76 | 10 | 6 10 6 |
| ditto | 86 | 10 1/2 | 7 17 6 | | | | |

TOTAL PRODUCE.

| | | | | | |
|--------------|-----|-----------|--------------|-----|-----------|
| Cuba | 659 | £8008 3 6 | Ballycunnisk | 80 | £528 0 0 |
| Walleroo | 281 | 1748 5 0 | Seville | 151 | 1179 18 6 |
| Cape | 34 | 761 10 0 | Concordia | 24 | 313 4 0 |
| Kurlia | 13 | 139 8 6 | Peruvian | 24 | 585 0 0 |
| Berehaven | 185 | 1399 1 0 | Cobres | 13 | 211 17 6 |
| Newfoundland | 302 | 2924 1 0 | Californian | 164 | 1519 13 0 |

COMPANIES BY WHOM THE ORES WERE PURCHASED.

| | Tons. | Amount. |
|------------------------------------|-------|------------|
| Copper Miners' Company | 233 | £2141 14 0 |
| Freeman and Co. | 76 | 2063 18 0 |
| Grenfell and Sons | 213 | 2108 8 0 |
| Sims, Williams, & Co. | 102 | 1432 12 0 |
| Vivian and Sons | 253 | 2554 16 0 |
| Williams, Foster, & Co. | 230 | 2549 4 6 |
| British and Foreign Copper Company | 12 | 649 0 0 |
| Mason and Elkington | 78 | 904 15 0 |
| Bankart and Sons | 104 | 749 2 6 |
| Charles Lambert | 92 | 705 4 0 |
| Ravenhead Copper Company | 336 | 3441 8 0 |
| Sweetland, Tuttle, & Co. | 82 | 611 16 0 |
| Hadland and Co. | 105 | 781 8 6 |
| Penclawdd Copper Co. | 50 | 284 15 0 |

Total 1920 £19,309 2 0

NO SALE, Sept. 25.

| | 21 cwt. | Produce. | Price. | Standard. |
|---------|---------|----------|---------|-----------|
| British | 295 | £7 4 9 | — | — |
| Foreign | 1655 | 14 | 10 10 2 | — |

Whole sale 1920 13 1/2 £10 1 2 £97 5 6

COPPER ORES.

Sampled Aug. 22, and sold at Tyack's Hotel, Camborne, Sept. 6.

| Mines. | Tons. | Price. | Mines. | Tons. | Price. |
|-----------------------|-------|---------|-----------------------|-------|--------|
| Clifford Amalgam..... | 120 | £3 1 0 | Wheal Basset..... | 36 | £7 1 6 |
| ditto..... | 110 | 3 5 0 | ditto..... | 28 | 5 5 0 |
| ditto..... | 102 | 3 6 0 | ditto..... | 20 | 9 3 0 |
| ditto..... | 90 | 4 0 6 | Tolcarne..... | 55 | 3 8 6 |
| ditto..... | 75 | 3 15 0 | ditto..... | 42 | 2 7 0 |
| ditto..... | 71 | 1 17 0 | ditto..... | 31 | 3 15 6 |
| ditto..... | 70 | 3 10 0 | ditto..... | 21 | 3 2 6 |
| ditto..... | 60 | 7 11 6 | East Pool..... | 78 | 2 13 6 |
| ditto..... | 48 | 3 10 0 | ditto..... | 58 | 3 3 6 |
| ditto..... | 38 | 3 19 0 | South Frances..... | 50 | 3 11 6 |
| Consols..... | 39 | 6 10 6 | ditto..... | 32 | 7 18 6 |
| ditto..... | 3 | 16 12 6 | ditto..... | 26 | 5 8 6 |
| West Seton..... | 67 | 8 0 6 | ditto..... | 25 | 5 4 6 |
| ditto..... | 64 | 7 3 0 | South Tolgus..... | 63 | 4 5 6 |
| ditto..... | 43 | 4 13 6 | ditto..... | 43 | 5 0 6 |
| ditto..... | 60 | 2 8 0 | North Roskear..... | 70 | 5 1 6 |
| ditto..... | 58 | 3 10 6 | ditto..... | 21 | 1 2 6 |
| ditto..... | 57 | 2 11 0 | Nanlilas..... | 46 | 3 18 6 |
| ditto..... | 54 | 6 16 6 | ditto..... | 25 | 0 2 6 |
| ditto..... | 49 | 4 18 6 | ditto..... | 12 | 1 10 6 |
| ditto..... | 37 | 5 0 6 | North Grambler..... | 41 | 4 2 6 |
| Wheal Basset..... | 40 | 3 15 6 | ditto..... | 35 | 4 2 6 |
| ditto..... | 40 | 2 13 6 | South Condrarrow..... | 23 | 4 18 6 |
| ditto..... | 39 | 7 17 0 | Wheal Uny..... | 4 | 6 3 6 |

WATSON AND CUELL'S MINING CIRCULAR.

WATSON AND CUELL,
MINING AGENTS, STOCK AND SHARE DEALERS, &c.
1, ST. MICHAEL'S ALLEY, CORNHILL, LONDON.

MESSERS. WATSON AND CUELL having made arrangements for transferring their weekly Circular, which has had so large a circulation during the past ten years, to the columns of the *Mining Journal*, their special reports and remarks upon mines and mining, and the state of the share market, will in future appear in this column.

In the year 1843, when Cornish mining was almost unknown to the general public, attention was first called to its advantages, when properly conducted, in the "Compendium of British Mining," commenced in 1837, and published in 1843, by Mr. J. Y. WATSON, F.G.S., author of "Gleanings among Mines and Miners," "Records of Ancient Mining," "Cornish Notes" (first series, 1862), "Cornish Notes" (second series, 1863), "The Progress of Mining," with statistics of the Mining Interest, annually for 21 years, &c., &c. In the Compendium, published in 1843, Mr. WATSON was the first to recommend the system of a "division of small risks in several mines, ensuring success in the aggregate," and Messrs. WATSON and CUELL have always a selected list on hand. Perhaps at no former period in the annals of mining has there been more peculiar need of honest and experienced advice in regard to mines and share dealing than there is at present; and, from the lengthened experience of Messrs. WATSON and CUELL they are emboldened to offer, thus publicly, their best services to all connected with mines or the market, as they have for so many years done privately, through the medium of their own Circular.

Messrs. WATSON and CUELL transact business in the purchase and sale of mining shares, and other securities, payments of calls, and transmission of dividends, obtaining information for clients, and affording advice, to the best of their knowledge and judgment, based on the experience of more than 30 years active connection with the Mining Market.

Messrs. WATSON and CUELL also inform their clients and the public that they transact business in the public funds, railway, docks, insurance, and every other description of shares dealt in on the Stock Exchange.

Messrs. WATSON and CUELL are also daily asked their opinion of particular mines, as well as to recommend mines to invest or speculate in, and they give their advice and recommend mines to the best of their judgment and ability, founded on the best practical advice they can obtain from the mining districts, but they will not be held responsible, nor subject to blame, if results do not always equal the expectations they may have held out in a property so fluctuating as mining.

Messrs. WATSON and CUELL having agents and correspondents in all the mining districts, and an extensive connection among the largest holders of mining property, have the more confidence in tendering their advice on all matters relating to the state and prospects of mining companies, and are able to supply shares in all the best mines at close market prices, free of all charge for commission.

MODERN ENGINEERING.

Under the title of "A Record of Modern Engineering" (vol. 3), a most elaborate series of drawings, relating chiefly to the Thames Embankment, and accompanied by the necessary explanatory letter press, has been issued (through Messrs. Lockwood and Co., of Stationer's Hall-court) by Mr. Wm. HUMBER, A.I.C.E. The volume contains a biographical sketch of Mr. J. R. McClean, the President of the Institution of Civil Engineers, and essays, or articles, on the Construction of Harbours, Forts, and Breakwaters, on an Improved System of Fortification, on Granite and Iron Forts, on the Rationale of Railway Rolling Stock, on the Rationale of the Sewage Question, on the History of the Drainage and Sewerage of London, and descriptions of the Permanent Works of the Metropolis Main Drainage Works—North and South Sides, with descriptions of plates. The volume for the present year has a most accurate and striking photographic likeness of Mr. McClean, and the drawings are all executed with great skill, and carefully engraved, every necessary detail being accurately given. It is even superior to the two excellent volumes which have preceded it.

INDUSTRIAL HISTORY OF THE BIRMINGHAM DISTRICT.

A handsome and exceedingly interesting volume, descriptive of "The Resources, Products, and Industrial History of Birmingham and the Midland Hardware District," and embracing a series of reports collected by the Local Industries Committee of the British Association at Birmingham in 1865, has just been issued by Mr. Robert Hardwicke, of Piccadilly. It is not surprising to find it stated, in connection with such a district as that now reported upon, that the trades are so numerous, so infinitely various, and conducted by so many different persons that it has been found impossible to do full justice to all or even to mention all the names and branches which extend over Birmingham alone. The volume does much to show that within a radius of 30 miles of Birmingham nearly the whole of the hardware wants of the world are practically supplied. The coal and iron of Staffordshire, the chemical products, the glass and scales, and soap of Smethwick; the metal works, in infinite variety, which Birmingham produces, from the costliest plate and jewellery down to the commonest gilt toys; the engines and machinery, of every description, exported to all parts of the world; every class of article being produced, from the very cheapest to the very best, can be only imperfectly described, even in a volume of 700 pages.

The value of the work will be readily judged of when it is stated that it contains upwards of 100 articles upon the various trades and manufactures of the district, the names of the writers affording ample guarantee for the accuracy of the information given; thus, Prof. J. B. Jones sketches the geological structure of the South Staffordshire coal fields; Mr. Henry Johnson, the method of working and ventilating them; Mr. Henry Chance describes the manufacture of plate, crown, and sheet glass; and Mr. Samuel Timmins, who is also the editor of the volume, the Birmingham steel pen trade. Mr. S. Barker explains the Nickel German-silver manufacture, and every other article is the production of equally competent hands. The work throughout is so full of information of the greatest utility to all connected with the district, that it will be read and re-read with much pleasure, whilst the facility it will offer to the outside world to become acquainted with the productions of Birmingham and the surrounding district cannot fail to render its issue commercially satisfactory.

"SYNOPSIS OF HERALDRY."—Although the study of heraldry forms a most amusing pastime, the facilities for obtaining anything like an adequate knowledge of the subject have hitherto been so few that amateur heralds have always been comparatively scarce. An excellent little work, however, "A Synopsis of Heraldry, or a Short and Easy Method of Acquiring the Art of Blazon," by Mr. C. N. ELVIN, M.A., F.G.H.S., has just been issued by Mr. R. Hardwicke, of Piccadilly, which at once removes all difficulty in the matter. Mr. Elvin gives upwards of 400 engravings, including the arms and crests of some 300 families, and in an admirable introduction he points out the importance of heraldry, and the objects for which arms are employed. The book is conveniently divided into seven chapters, treating of the various sorts of arms; the escutcheon, its points and partition lines, roundels and gulleys; tinctures; ordinaries, and their diminutives and sub-ordinaries; external ornaments, crest, wreath, helmet, crowns, lambrequin, mantle, supporters, badge, and motto; distinction of houses and hatchments; and of blazon and marshalling respectively. By way of appendix, there is given a dictionary of terms used in heraldry; an index to the armorial bearings is given. For a small book, Mr. Elvin's is certainly as complete and useful as any that has been published for the instruction of students in heraldry.

A GUIDE TO INVESTORS is furnished in Mr. Lelan's monthly "Stock, Share, and Insurance Register," in which there is a continuous review of all species of investments, giving information on their condition and prospects, with comparative summaries of the average dividends they pay. We do not know of a publication which comprises more useful information, brought together with evident care, and affording the means, therefore, by which a person intending to purchase stocks or shares may be guided through the numerous descriptions of securities the markets now offer.

KRUPP'S STEELWORKS AT ESSEN.—As a situation for a large manufacturing place are better adapted than Essen, as it is crossed by the three principal lines of railway in Western Germany, and is within an hour and three-quarters of Cologne, on the direct route to Berlin. It is here that has been created that grand steel-making establishment of which so much has been whispered and so little known. While we are justly proud of our Watts, Arkwrights, Stephenson, and Brunels, to say nothing of our great living engineers, from whose names it would be invidious to make a selection, we can afford to render the tribute which is equally due to foreigners of distinction. At the death of his father, in 1827, Alfred Krupp succeeded at the age of 14 to a small workshop for the manufacture of cutlery and rollers for gold. His genius and energy soon drove him forward, and by his courage, skill, and good fortune he has become the sole possessor of an establishment which last year turned out upwards of 50,000 tons of cast-steel, one-third of which was made into guns, the rest into bars, shafts for engines, axles, railway bars, tyres of wheels, plates for boilers and ships; in short, anything requiring at the same time strength and hardness. The works, exclusive of the blast-furnaces, cover 400 acres of ground, consume 750 tons of coal daily, use the steam of 120 boilers, burn 7000 flames of gas, and give employment to above 8000 men and boys, whose wages amount to nearly 400,000*l.* a year. The importance of retaining as nearly as possible the same men being fully recognised, a fund has been created, to which every man or boy employed must subscribe, and out of which he commands advantages sufficient to make it well worth his while to stick to his work. The rates of subscription and proportionate advantages are regulated by the wages, the higher grades of workmen subscribing 1*d.* and the lower 1/4*d.* per thaler (3*s.*). Mr. Krupp adds a sum equal to half that subscribed by the men. From the resources of this fund a workman can claim a pension sufficient to live upon respectably after 25 years' labour. Men injured in the service receive full pay for as long as they may be unable to work; the sick are treated and liberally provided for, and the dead are buried. Finding that the bread supplied to the men by the ordinary bakers was deficient in quality and quantity, considering its price, Mr. Krupp built large bakeries, whence he supplies excellent bread at cheap rates, buying the flour wholesale from Russia, and charging only a small profit. Similar arrangements are made for the supply of potatoes, and it is contemplated to extend the system to meat. This paternal management is very successful, and appears to work well for the interests of both master and man. Though a system of the same kind is carried out in some of our greatest establishments, it is not so thorough, nor on so great a scale. The working hours are divided into only two parts—the day's work from 6 A.M. to 7 P.M.; the night's from 7 P.M. to 6 A.M. The ore employed is obtained partly from Krupp's own mines at Nassau and near

Coblenz, and partly bought. The former is spathic, furnishing the well-known spiegelstein; the latter is red oxide. Coke is employed for smelting, being considered as good a fuel as can be used if carefully selected. The iron is converted into steel by puddling, a small quantity of cemented steel being occasionally used. A little malleable iron is made by a modification of Bessemer's process, but no steel. Mr. Bessemer offered his patent to Krupp, as I understand, but it was then in its infancy, and was not considered so promising as to divert the attention of the latter from his own speciality—the puddling process. He has not, therefore, carried it to such a forward condition as has been attained by some of our ironmasters at home. Though the spiegelstein contains so large a proportion of manganese, a mere trace is left after puddling, as shown by Mr. Abel's analysis:—Carbon combined, 1.18; silicon, 0.23; sulphur, none; phosphorus, 0.02; manganese, trace; cobalt and nickel, 0.12; copper, 0.30; iron (by difference), 98.05—100.00. The largest steam-hammer weighs 50 tons, and is single-acting, with a 10-ft. drop; it cost about 100,000*l.*, of which two-thirds was for the bed; and Krupp has obtained the necessary concession from the Prussian Government to permit him to build a 120-ton hammer, which is to have a 18-ft. drop, but whether made, to his own water, and I believe, determined. It is estimated to cost 200,000*l.* Two huge guns, which are to be about 16 calibres in length, and to weigh 28 tons, are being manufactured for the Russian Government, and will cost 700,000*l.* They are to be breech-loaders, on Krupp's principle, throwing a projectile of 540 lbs., with a charge of 50 lbs. of prismatic powder, and are intended for the defences of Cronstadt. A 15-in. breech-loading gun has been commenced, which will eventually belong to the Russian Government; it is to be exhibited in the Paris International Exhibition. The projectile will weigh about 200 lbs. The manufacture of Krupp's crucibles was once a valuable secret, and the form of secrecy is still kept up. I believe that Mr. Krupp would not now deny the truth of Dr. Percy's assertion that "those now made by Mr. Ruel, of High Holborn, and by the Patent Plumbago Crucible Company, at Battersea, are equal to anything yet produced abroad." The foundry is a very large building, with furnaces capable of heating upwards of 1200 crucibles at once, that number being actually used for some of the largest casts.—C. B. B.

Notices to Correspondents.

CHROME IRON ORE.—"Inquirer" would be glad to know from any readers of the *Journal* of a market for and price of Chrome Iron Ore in grain, yielding from 30 to 40 per cent. of the sesqui-oxide of chromium?

MINING IN LANCAIRESHIRE AND CUMBERLAND.—In last week's *Journal* there is a letter, signed "Observer," recommending North Lancashire and Cumberland as good fields for mining enterprise, citing the copper mines at Conistone for example. With much deference, I suggest that it is very undesirable to have mines opened for lead or copper in this region, which has splendid lakes, heretofore swarming with fish, sources of great attraction to anglers and tourists, and, consequently, beneficial to the district, by causing money to be spent there. The value of these waters will be nothing, and the fish annihilated, if polluted with mineral water; and I suppose this cannot be prevented, from flowing into them. The beautiful lake at Conistone is ruined for fishing by the water sent into it from the copper mines in question; Ullswater is in the same state from the lead mines; and Windermere will follow as soon as similar causes come into operation. There is further cause for objection to mines from the fact that projects are afloat for using the waters of these lakes to supply some of the great towns in Lancashire with pure water. If these waters are impregnated with lead or copper in solution they will be quite unfit for consumption. I have no doubt that similar considerations will have some weight.—CONSTANT READER: Manchester, Sept. 6.

HINGTON DOWN.—No doubt some of your readers will inform me, through your valuable *Journal*, which I have read for a number of years, why the above mine is quoted so low, although it has paid 20,000*l.* in dividends, and just distributed another 1500*l.* (5*s.* per share), retaining enough for another 5*s.* in hand, clear of liabilities. The mine is provided with a large plant, comprising two steam-engines and other first-rate machinery, is well managed, and was never looking better. The shares have been four times their present price, with the prospects not so good. With a rising standard, this mine will tell its own tale.—N. M.

MINE MANAGEMENT.—OLD WHEEL RUSSELL.—I have held shares in this mine for many years, during which time calls have been made with the greatest regularity; but, although the mine is still going on, it can be scarcely be called working, as only a few men are employed. I see that Capt. Bray reports the mine worth so much per fathom for ore; but I watch the ticketing papers, and see no sale. What has become of the ore? I suppose the purser is waiting for better prices. If so, and if they have large quantities, it will be better not to glut the market by selling all at once. We have a staff kept up, of resident agent and local purser, and the mine cost averages about 40*l.* monthly—so that, after paying the agency costs, how much can be left for mining operations underground? No report has appeared in the *Journal* for I should think twelve months. Surely, it is time to look into this mismanaged affair.—SHAREHOLDER.

COLOGNE MINING COMPANY.—Can any reader inform me if there is any chance of ever getting anything from this company? I hold 50 shares (original), on which I have paid 60*l.*, and for a long time have not heard anything of the concern.—SHAREHOLDER.

CALSTOCK CONSOLS.—The latest report just received by me, as a shareholder in this mine, is that "The Danescombe lode continues to be worth from 15*l.* to 20*l.* per fm., and is laying open very valuable ground." There are 230 shares to be tendered for on the 19th, and they will all be purchased; they are forfeited shares. What price they fetch will fix the selling price of the shares. As soon as the new sets are completed, the shaft will be commenced to ventilate the ore ground laid open, so as to be able to return it.—A SHAREHOLDER.

STEEL GUN-BARRELS.—Without expressing an opinion as to the value of the gun-barrel manufacturing process described in last week's *Journal*, we beg leave to dispel the error of your informant as to the difficulty and expense of boring mild steel from the solid bar. Ever since 1836 Messrs. Berger and Co., of Witten, in Prussia, have supplied some millions of cast-steel barrels, so well known to the Government in Europe, based on an expense of about 9*l.* per barrel, by drilling benches of the highest accuracy, the cost of which does not exceed 50*l.* England, always behind in appreciating the application of steel to useful purposes, has hitherto not devoted a serious thought to the improvement of the material used in small arms, but the adoption of a breech-loader will soon make the question of vital importance.—HEINTZMANN AND ROCHUSSEN: Abchurch-lane, King William-street.

NEW BIRCH TON AND VITIFER CONSOLS.—Can anyone inform me what has become of this company, and whether the actual extent of the late defalcations has ever been ascertained?—P. H. I.

DYFSGWYD MINES.—In the notice beneath the Share List you properly state that you are desirous of making it as perfect as possible, and call upon those interested to assist you in doing so. As a shareholder in the Dyfsgwyd Mines, I observe that for years the amount paid appears to have stood at 12*l.* 6*s.* while, unfortunately, to pay cost, I have been latterly obliged to pay frequent calls, and, therefore, 12*l.* 6*s.* must be either wrong now, or it must have been so long ago. The secretary has not kept you properly informed, I am not a loss to understand. For the first time, too, I observe that the shares are marked as if business had been done at 7 to 8; I should like to know whether these are considered brokers' prices, and whether they mean shillings or pounds, inasmuch as I understand that a short time since shares were forfeited because a call of 8*s.* per share could not be paid, and the shares unsaleable at any price.—A SHAREHOLDER IS DYFSGWYD: London, Sept. 4.

NEW PEMBROKE.—This mine is not known in the market, as the shares are held firmly for investment, but they appear in the List every week, though no "business" is done in them. For the information of your readers, I may state that the locality of the mine (close to Par Consols) is considered by practical men to be first-rate for mineral. The deeper the workings have been continued the better the ore looks for mineral, and extra steam power is now being prepared to sink the shaft deeper. This extra steam power is an additional boiler to the same engine, and everyone is hopeful of good results. A further rise in the standard for copper and tin is fully expected by the Cornish miners. The last call on these shares was 1*s.* 6*d.* per share, and they sold during the past four months about 8 tons of black tin, and will return more than that during the next four months, and also 50*l.* worth of copper ores. The next meeting will be held in November, when great improvements are expected.—A CORNISHMAN.

CALDBECK FELS CONSOLIDATED MINING COMPANY.—The large interest I hold in this company is the best evidence I can adduce as to my opinion—based upon that of the leading practical authorities of Cornwall and elsewhere—of the actual value of the property; but cannot help thinking that the shareholders have a right to expect from the directors or manager some explanation as to the reason why returns have not yet been made. In connection with a property of such an extent, there is of course a considerable amount of work to be done and machinery to be erected, in order to develop the resources upon such a scale as that contemplated by the board, but these works have now been some time in progress, and as yet no substantial results realised. I would not have the directors or manager infer from the above remarks that my opinion of the value of the property is in any way changed, the more particularly when I recollect that since the formation of the company there has been given the disinterested, yet more than confirmed, testimony of such men as Capt. Trevillon (of Herodfoot), Mr. J. Kendall (of Redruth), and Capt. Henry James, the latter stating that "I never saw better-looking lead lodes in any part of the world than at Caldbeck Fels, and if the lodes turn from the carbonates into blue lead the Caldbeck will be the greatest lead mining property in England, and I believe the chances are 99 per cent. in its favour." While the shareholders cannot but thank "the veteran miner"—Capt. James—for the expression of such an unusually favourable opinion as to the ultimate position of their property, it would have carried much greater and more demonstrative weight had he stated the grounds upon which it was formed. Be this as it may, the shareholders have an unquestionable right to some detailed information as to the position and prospects of their enterprise.—A SHAREHOLDER.

THE ELECTRIC TELEGRAPH IN 1790.—The attempts made to introduce telegraphy by simple electricity, which have not succeeded, must be distinguished from those by voltaic magnetism—electro-magnetism, which have been everywhere successful, except in deep seas. As respects electricity, Arthur Young (1787-9) mentions the experiments of Lomond, who conveyed messages from one room to another. Francis Ronalds, who rejected the galvanic or voltaic electricity, proposed by some Germans and Americans, and now successful, transmitted signals a distance of eight miles. He wrote in 1823, and states that Cavillo proposed to convey intelligence by passing sparks through an insulated wire (Penny Cyclop., xiv., 154). The relation of electricity to magnetism engaged the attention of the Electoral Academy of Bavaria as early as 1774. In 1777, Beccaria first noticed that an electric shock made the two ends of the magnetic needle change their position to east and west. It was not till 1812 that Oersted published in German his work on the identity of chemical and electric forces, which was immediately translated into French by Marcel de Serres. It was in Oct., 1820, that Oersted himself communicated in Thomson's "Annals of Philosophy" the method of causing the needle to diverge to the right or left by the voltaic force. In 1840, Cooke and Wheatstone first took out their patent; and in 1841 the Great Western Railway, influenced by Brunel, had a line 15 miles in length from Paddington,

THE MINING JOURNAL,
Railway and Commercial Gazette.

LONDON, SEPTEMBER 8, 1866.

PETROLEUM AND SHALE OIL AS SUBSTITUTES OF COAL.

The report of experiments that have been conducted at Woolwich Dockyard, with the view of testing the value of petroleum and shale oil as substitutes for coal in raising steam in marine boilers, recently published by order of the House of Commons, would be calculated to excite disappointment if the statements made some two years ago, when this subject was first broached, could have been generally received with any degree of credence. Among the advocates of this proposed substitution, it will be remembered by our readers that Mr. RICHARDSON—who speaks of the use of petroleum in steam navigation as his invention—stated in a letter to the *Mining Journal* of Dec. 24, 1864, his conviction that 42 gallons of oil were quite equal as steam-producing power to 1 ton of coals. At the same time, admitting that this required to be proved, he offered the assurance that it should be proved. That opinion was so entirely at variance with the well-known characteristics of petroleum, and with its equally well-known nature in regard to the production of heat, that no one at all conversant with the conditions upon which the heating capability of any fuel depends, could for a moment accept Mr. RICHARDSON'S view as correct. However, since he undertook to prove such to be the case, and since the Admiralty had ordered experiments to be made on the subject, courtesy demanded that the result of those experiments should be waited for. If it were a fact that 1 ton of petroleum or of coal oil would do the work of 6 tons of coal, of if by any combination of conditions six times as much practical effect could be realised from 1 ton of petroleum as from 1 ton of coal, then, indeed, all the arguments which had been urged against the possibility of substituting petroleum for coal would to a great extent, if not entirely, lose their force. In such a case it would be quite conceivable, so far as steam production alone was concerned, that petroleum might be substituted for coal as fuel, even though its price were tenfold that of coal. In such a case a vast advantage would have been gained by the substitution, inasmuch as a far smaller amount of stowage would have been required in a ship propelled by steam, to enable it to keep the sea for a given time, and the space which would otherwise have been occupied with coal might have been devoted profitably to the stowage of cargo. In the case of steam-propelled war vessels, also, a still greater advantage would have been gained by the substitution, if the relative fuel-values of petroleum and coal were in the proportion of 6 to 1; inasmuch as these vessels would then have been able to keep the sea six times as long as they could do with coal as fuel. Certainly, there were objections to the use of petroleum as fuel in steam-vessels, which were quite independent of any considerations as to the heating capability of this material as compared with that of coal; but, in the face of such a disproportioned advantage as that involved in the heating capability being six times as great as that of coal, these objections might have been disposed of and removed. Consequently, the question as to the feasibility of using petroleum narrowed itself to the enquiry whether 1 ton of petroleum could be got to do the same work as 6 tons of coal—everything, indeed, turned upon that. The consideration of further questions would have been premature until that was determined.

Mr. RICHARDSON and his supporters scoffed at the idea of being enlightened on this question by scientific knowledge, and clamoured loudly against the attempts which were made to convince them of their error. They were steadfast in refusing to listen to arguments based upon the physical principles involved in the generation of heat from fuel. These were denounced as being mere theory, inapplicable to the solution of the question. No doubt they were perfectly sincere in their want of appreciation for such arguments, and no doubt the reason of it did not at all savour of affectation. But still nothing else than practical trial would satisfy them. No tribunal can be more efficient either for proof or disproof. Conviction being otherwise unattainable, no one could object to recourse being had to such a test. An opportunity was afforded under the sanction of the Admiralty; but no sooner had experiments been commenced than the solution of the main question was impeded by difficulties of a minor character. It was found to be by no means easy to burn this highly inflammable material petroleum, or at any rate to burn it in the sense in which steam fuel requires to be burned—that is to say, in such a manner as to generate its equivalent of steam within the boiler. This erratic material showed a predilection for escaping from the boiler furnace unburnt, and either manifesting its capability of generating heat by torrents of flame issuing from the mouth of the funnel, or showing its versatile powers by choking the flues with soot, and smothering the neighbourhood with black smoke. These sort of vagaries were very inconsistent with the realisation of six times as great a practical effect as could be attained with coal. Still Mr. RICHARDSON, with all the enthusiastic tenacity of an inventor, was not dismayed or daunted. He at once proceeded to devise a curb for his fiery courser. For had he not undertaken to prove his proposition that petroleum has six times the steam-producing power of coal? Was he not bound to make his practical trial? Consequently, the steam jet was applied, and after a great deal of exploding and melting of grates and other digressions, the fire was eventually got to burn for some five or six hours at a time, still, however, not without copious smoke, an accompaniment not by any means desirable or pleasant for a gun-boat trying to get within range of an enemy unperceived. At the same time, the records of experiments indicate a very unsatisfactory state of flues after each of these short trials, for the notes attached are often "very foul," or "nearly choked," and when it is remembered that soot deposited is steam lost, this result is by no means reconcilable with a six-fold practical effect, to say nothing of the hindrance a vessel would experience in consequence of choked or foul flues, and the waste of fuel attending such a state.

But to proceed to the great question, as to sixfold steam-producing power. What says the report as to this vital point? The best results in the table given with the report are those obtained on the 5th, 6th, and 7th of June. These trials varied from six to ten hours each, and the quantity of water evaporated was about 18 lbs. per 1 lb. of oil consumed. Now, 10 lbs. of water is not unfrequently evaporated per 1 lb. of coal consumed, so that the result obtained in the most successful trials with petroleum is very far from indicating a sixfold practical result, or even a sixfold actual capability. In some of the trials the amount of evaporation was not more than about 7 lbs. per 1 lb. of oil consumed, especially when the trial was continued to a second day, and then also the tubes were very foul at the conclusion of the experiment, showing that the combustion was very imperfect.

A still more significant fact established by these experiments, in regard to the applicability of petroleum as steam fuel, is the low rate of evaporation indicated as obtaining in all the trials, sometimes less than half that obtained with the coal trial boiler at Woolwich—34 cubic feet per square foot of grate surface, a rate of evaporation which is much below what is attainable in practice with coal. No doubt this result is due to the precautions requisite for maintaining the combustion without smoke or choking of the flues with soot. This necessity is sufficiently felt in the use of coal; but if the use of petroleum as fuel involves such a steering between Scylla and Charybdis as is indicated by the Woolwich trials; and, if the results are even then no better than those reported, there is an end to all hope of realising the sixfold steam-producing power, and a sufficient demonstration of the impracticability of substituting petroleum for coal with any kind of advantage. This is, indeed, the real issue of the report which has been presented to Parliament on the subject. That being the case, it is quite unnecessary to enter upon any further consideration of the many other questions which might be raised as to the practicability or advantage of using petroleum or coal oil as steam fuel in marine boilers, and it is to be hoped that this will be sufficiently apparent now to everyone. Mr. RICHARDSON has most successfully proved that he was totally in error in the opinions he maintained so vigorously. He has had the satisfaction of doing this by means of the test which he selected himself, and we hope he will now

be able to perceive that the opinions expressed in this Journal on several occasions in reference to this subject, were worthy of being accepted, and that they might have saved him a great deal of misplaced labour in the pursuit of an object which was from the outset unattainable.

PETROLEUM IN ITALY.

In a former Journal we mentioned the fact of the discovery in Northern Italy of some important petroleum-bearing lands. We have since been favoured, by Mr. E. ST. JOHN FAIRMAN, F.G.S., Fellow of the Geological Societies of France and Milan, with a few memoranda, which we publish as likely to interest those of our readers who follow this important question of Petroleum. We hope at an early date to be able to produce in our columns the map of the districts showing the strike of the petroleum zone, which Mr. FAIRMAN has promised to hand us when completed, as also to quote extracts from the pamphlet which he is at present occupied in arranging.

Having devoted considerable time and labour to the subject, and experienced those pleasing delights which only those appreciate who have travelled on foot for months over the Italian mountains, and waded through the brooks and torrents so numerous in those provinces, living, or rather existing, on the famous "polenta" and new red wine, a mixture to be supposed highly conducive to cholera, he returned, and pronounced 134 different localities in the provinces of Parma, Reggio, and Modena as rich petroleum-producing tracts.

The importance of his labours attracted the attention not only of the provinces but likewise that of the Government, and the result obtained for him most flattering appreciation in the country and from the local press. The Government, convinced of the benefit that the country would derive from the development of its own buried resources, passed a law (May 1, 1866) raising the duty on refined petroleum from 2 frs. to 6 frs. per 100 kilogrammes. We shall not doubt see that Italian petroleum will become ere long an important article of commerce. Our contemporary, the authority of the day on oil matters, writing on Aug. 4, asserts that "the samples are very remarkable for their natural purity, several of them being as transparent as the best refined oil; they are, in fact, the first samples of transparent crude oil which have come under our notice."

Many petroleum wells have existed in these provinces for centuries, and are referred to by HERODOTUS, PLINY, HUMBOLDT, SPALLANZANI, VALISNERI, &c., and in the works of many modern geologists. Only about 30 years ago a trial was made, and good results were obtained in the province of Piacenza, when 28 common brick wells were sunk to from 45 to 75 metres, and they produced on an average 25 kilogrammes of oil per diem. In 1802 the city of Genoa was lighted with petroleum from Miano. The famous theatre at Reggio was also illuminated with the mineral oil from the wells of Montegibbio. In olden times one well at Sant' Andrea, at a depth of 70 metres, produced 100 pesi per diem (25 lbs. per pesi); this well fell in through bad brickwork. At Miano one well, 73 metres deep, contained 125 feet of oil. The oil merely filters or drips into the well, no mechanical appliances other than a rude bucket and rope being used to obtain it. The diameter of the wells is generally about 14 metres; it is now sold to dealers in Milan, Parma, Reggio, Modena, and Sassuolo, and may be seen burning in many a lamp, and is known generally by the name of "lucina," and the inhabitants of the villages in the vicinity of the wells are at the present day burning these oils in their crude state. In the days of the dukes, the ex-duchies produced annually about 24,000 kilogrammes of oil, which, selling at 250 frs. per kilogramme, gave to the province an income of 60,000 frs. Large quantities were shipped to Greece during the War of Independence to prime their fire-ships.

FOREIGN MINING AND METALLURGY.

The advance which has just taken place in coal in Belgium, and the scantiness of the extraction, which scarcely keeps pace with the requirements of the moment, have accelerated orders for supplies, as industrial entertain apprehensions that a fresh rise will occur in quotations. Stocks are almost unknown, as in proportion as the extraction is made available it is carried off by boat or railway. In the Mons basin the demand exceeds the possibility of meeting it. In the Centre, also, great activity is remarked in the demand. In the Liège basin the same state of affairs prevails, there being an abundance of orders and a restricted production. Several coke-furnaces are being constructed at Seraing, with a view to meet the requirements of the blast-furnaces of the Moselle and the Luxembourg. The position of Belgian sidery presents some embarrassment. It is not orders which are wanted by the Belgian rolling-mills; on the contrary, they are tolerably well supplied with them, and some contracts for rails are understood to be in course of negotiation, but production is everywhere greatly restricted from the want of labour. The blast-furnaces, which for several weeks past have had their products neglected, have a considerable stock of pig, which is always increasing, so that the quotations for refining and casting pig are purely nominal. To this state of affairs must be added the fact that the rates of the products of the blast-furnaces of the Luxembourg and the Moselle, the proprietors of which are endeavouring now to form a connection on the Belgian markets. The Belgian General Railway Plant Company has just held its annual meeting. It will be remembered that on the occasion of an important contract for passenger carriages and goods trucks required for the State lines, the Government came to terms with some German and French houses at an average abatement of 3 per cent. from the price fixed by the Belgian works. In a discussion in the Chambers, the Minister of Public Works defended this measure of his department, and attempted to prove that the saving thus realized was important, since to the reduction of 3 per cent. in the price must be added the Customs' duties paid by the foreign works. At the meeting of the Belgian General Railway Plant Company, the director-general, after having recalled these facts, observed that the argument as to Customs' duties would not bear examination, since the Belgian makers themselves paid heavy duties on wood, steel, copper, &c., used in the construction of carriages. It appears, besides, that the administration of the State lines is not entirely satisfied with the result of the dispute. It appears, in fact, that the quality of the carriages and trucks furnished by the French works is such that at present the commission of reception has refused to receive all the passenger carriages presented, while they have not passed the trucks with much goodwill.

A few miscellaneous facts. It appears that the production of the Niederfischbach (Prussian) Company was as follows during the second quarter of 1866:—Zinc plumbiferous minerals, 207½ tons; Concoria ditto, 210½ tons; Wustelsen ditto, 911½ tons; Fischbachwerk ditto, 313 tons; Rotherader spathic iron minerals, &c., 184 tons; Obersterkreutz ditto, 106 tons; Obersterkreutz ditto, 47 tons; total, 1966½ tons. At the reduction furnaces the production amounted to 246½ tons of lead. The process of disargement yielded the annexed results:—Refined lead, 229½ tons; litharge of gold, 24½ tons; and fine silver, 429 tons. The administration of the collieries of the Sarre has just published a new tariff in connection with the sale of the coal and coke of that basin, an advance being established on almost all descriptions. The dividend for the first half of 1865 on the shares of the Mines of the Loire Company has been fixed at 5s. per share, and at 10s. for the shares *au porteur*. The general meeting of the Mousala Mines Company did not take place. One signature having been omitted in the notice of convocation, the ex-manager protested against its validity. The shareholders of the Asturian Collieries and Metallurgical Company have accepted the resignation of the manager, and have appointed a commission of three members to report on the state of the works, and to study the actual position of the company. The commission will make its report in November, when the meeting of the company is to be held. The Sarcilère Mines Company has adjourned the payment of its coupons, due and to become due; the position of the company is considered, however, to be susceptible of improvement. The Providence Forges Company will pay, Oct. 31, a dividend of 4s. per share in respect to the exercise 1865-6. Meetings are announced as follows:—Ruhrl Collieries Company, Sept. 18, at Düsseldorf; Jemeppe-Auvels Collieries Company, Sept. 20, at Brussels; Crivino Mines Company, Sept. 24, at Paris; Stirling (Moselle) Collieries Company, Sept. 28, at Paris; Andenne Metallurgical Company, at Andenne; Sara-Longchamp and Bouvy Collieries Company, Oct. 25, at St. Yvaast.

Chilian copper has hardened at Havre, 81½ to 85½ per ton having been made during the last few days. The position of the other markets of the Continent appears to be generally improving, and prices have displayed an upward tendency. At Amsterdam, Drontheim copper has made 64 fls.; English, 46½ fls.; and Swedish, 49 fls. At Havre, Chilian and Peruvian, in bars, have made 85½; Peruvian mineral (pure standard), 92½; United States (Baltimore), 94½ to 96½; ditto, Lake Superior, 100½ to 114½; Mexican and Plata, in bars, 72½ to 74½; Russian, 90½ to 92½; old yellow copper, 52½ to 56½; red ditto, 76½ to 77½; and bronze, 68½ to 76½ per ton. At Paris, English, in plates, has made 84½; and Chilian has brought the same price. As regards tin, the sales effected of late on the Dutch markets have not been considerable, but they indicate, nevertheless, a certain revival in affairs; during the last fortnight the tendency of the market may be said, in fact, to have been upwards; 48 fls. has been paid for Banca, but at the last dates sellers could not be found at that price. At the same time, the upward movement in tin may be checked by the approaching public sale, on which the attention of speculators is concentrated, and the results of which are awaited with much impatience. This sale, announced for the 28th instant, comprises about 109,300 ingots of Banca, and 700 ingots of Billiton, of which 32,500 ingots are deposited at Schiedam, and 4100 ingots at Middelburg. As compared with a sale held on March 22, 1866, the total quantity offered at the approaching sale is likely to be less by 2500 blocks. The Society of Commerce has declared that it will not bring any other tin upon the market before next spring, as, before that period, no public sale will be held in the Dutch Indies on Government account. The firmness

of the English and Dutch tin markets has exerted a favourable influence on the tone of the German markets, which remain generally firm. At Rotterdam the last quotations reported were—Banca, 48½ fls.; Billiton, 47½ fls.; and English, 48½ fls. At Paris, Banca tin has made 87½; Detroit, 85½; and English, 82½ per ton. At Havre, Banca has made 84½; Detroit, 81½ to 82½; and Peruvian, 64½ to 76½ per ton. At Hamburg the price of lead has been sustained, although the market is without animation. The tone of the other lead markets has been generally rather feeble, but prices have remained without change. At Rotterdam, Stolberg and German has made 11½ fls. At Amsterdam soft lead has realised 12 fls., and Stolberg has brought the same price. At Paris, Spanish sammons have made 20½, and French, 20½, 8s. per ton. At Havre, Spanish has made 19½, 16s. to 20½, and lead from other sources, 19½, 16s. per ton. The Hamburg zinc market has displayed a better tendency; affairs have not yet regained, however, all their former activity. The good tone of the advices from London and Hamburg has exerted a favourable influence on the Breslau market, and although transactions have been restricted, prices have hardened considerably. The other German zinc markets also remain firm. At Paris rough Silesian has made 21½, 4s. per ton.

The production of pig and iron appears to be developing itself satisfactorily in France. The following table indicates the production of pig and iron in each French group during the first six months of this year, as compared with the corresponding half of 1865:—

| Group. | Pig—1866. | 1865. | Iron—1866. | 1865. |
|---|-----------|--------|------------|--------|
| Aveyron | 18,558 | 15,117 | 58,619 | 58,390 |
| Ardennes and South of the Moselle | 57,590 | 58,419 | 38,016 | 36,400 |
| Paris | 13,000 | 12,000 | 22,718 | 23,080 |
| Centre | 72,036 | 70,484 | 54,280 | 55,560 |
| Champagne | 68,219 | 59,907 | 39,496 | 35,084 |
| Comté | 35,830 | 38,229 | 28,290 | 24,199 |
| Corsica | 9,940 | 7,239 | 420 | 325 |
| Creusot | 57,666 | 49,000 | 50,086 | 46,278 |
| Escant | 34,905 | 32,000 | 22,045 | 25,106 |
| Gard and Bouches-du-Rhône | 19,004 | 22,957 | 16,524 | 11,547 |
| Loire | 95,658 | 94,095 | 65,402 | 65,402 |
| North of the Moselle | 81,947 | 69,125 | 42,465 | 41,678 |
| North-West | 12,119 | 12,408 | 7,988 | 8,375 |
| Sambre | 40,208 | 42,770 | 32,827 | 29,086 |
| South-West | 17,182 | 17,165 | 5,260 | 5,221 |

Total

| | | | | |
|------|---------|---------|---------|---------|
| Tons | 638,959 | 490,915 | 456,436 | 422,628 |
|------|---------|---------|---------|---------|

The production of 1866 being known for only the whole year, it has been impossible to establish a comparison with rigorous exactitude, and hence we have divided into two parts the production of the whole year. In comparing the totals thus obtained account must be taken of the fact that the production of the first half of a year is always larger than the production of the second half of it. The totals indicated for the half of 1865 are, then, higher than the real production of the first half of that year. It is, then, clear, that the production of the first half of this year presents a considerable increase over the corresponding period of 1865, as well as regards pig as regards iron. With the exception of the Comté and Gard groups, which present a sensible reduction in the production of pig, all the other groups have sustained a part in the development of the production of France. By way of completing this statistical sketch of the position of metallurgy in France, it may be advisable to publish the following table, showing the quantities of iron minerals introduced into the country during the first six months of 1866 and 1865:—

| Source of supply. | 1866. | 1865. |
|-----------------------|--------|---------|
| England | 80,298 | 125,549 |
| Belgium | 33,783 | 37,412 |
| Germany | 29,586 | 21,119 |
| Spain | 44,110 | 36,054 |
| Italy | 36,042 | 17,172 |
| Algeria | 1,761 | 3,733 |
| Other countries | 1,761 | 3,733 |

Total

| | | |
|------|---------|---------|
| Tons | 228,134 | 241,781 |
|------|---------|---------|

It will be seen that the imports of minerals declined to the extent of more than 6 per cent. in the first half of this year, as compared with the corresponding period of 1865, while the production of pig increased to the extent of nearly 6 per cent., and that of iron to the extent of more than 8 per cent. Annexed is a comparison of the imports and re-exports of pig by warrants during the first halves of 1865 and 1866:—

| | 1866. | 1865. |
|----------------------------|--------|--------|
| Free of duty | 43,198 | 52,258 |
| With payment of duty | 20,636 | 41,568 |

Total

| | | |
|------|--------|--------|
| Tons | 63,834 | 93,826 |
|------|--------|--------|

A similar comparison with regard to iron and plates exhibits the annexed results:—

| | 1866. | 1865. |
|----------------------------|--------|--------|
| Free of duty | 28,780 | 20,294 |
| With payment of duty | 1,397 | 2,212 |

Total

| | | |
|------|--------|--------|
| Tons | 30,177 | 22,506 |
|------|--------|--------|

It will be observed that the total imports of pig declined to the extent of nearly 32 per cent. as compared with the corresponding period of 1865, and it is to be remarked that the diminution arises principally under the head of introductions with payment of duties—that is, those which remain in the country. As regards iron and plates, the first half of this year presents an increased import of 34 per cent. over the corresponding period of last year, but this increase only occurs under the head of imports duty-free—that is, imports again intended to be exported from the country; as regards imports paying duties, they present a diminution of nearly 40 per cent. Upon the whole, it may be concluded that siderurgy has a considerable tendency to improve in France, as we see—first, the production of pig and iron increases in almost all the metallurgical groups at the same time; secondly, the imports of minerals diminish; and, thirdly, the imports of pig and iron for consumption in the country considerably diminish.

MINING, METALS, AND MINERALS—PATENT MATTERS.

By M. HENRY, Memb. Soc. Arts, Assoc. Soc. Eng.

An Application for Patent has just been filed by W. E. NEWTON, No. 2215 (as a communication from B. H. Jenks, of Bridesburg, Pennsylvania), for preventing oxidation of lead balls in fixed ammunition; this application was dated Aug. 28.—On the 1st inst., A. LEBANDY, of Spring-gardens, applied for Provisional Protection, No. 2252, for a solder for joining metals, and for uniting fractures in metals, and for similar uses; this is a communication from C. Halot, of Brussels.—On the 3d inst., D. CADDICK, of Ebbw Vale, applied for Provisional Protection, No. 2259, for constructing and working furnaces for puddling, balling, heating, and melting metals, and for economising the heat of such furnaces. An application for patent relating to metallurgy from Ebbw Vale demands attention.

The following Notices to Proceed have been lodged, and any opposition intended to them must be lodged on or before the 25th inst.:—No. 1207, NEWTON (communication from Bomseler, of Philadelphia), steel.—No. 1210, BEGG, Preston, furnaces facilitating smoke combustion, and preventing cold air from going into the fire-bricks.—No. 1232, THOMAS and FRISCH, furnaces for smelting ores, and extracting precious metals therefrom.—No. 1258, BOTTELIER, consuming smoke.—No. 1438, LIVESY (communication from Blair, of Pittsburgh), cast-iron.—And No. 1938, NEWTON (communication from Savage, West Meriden, United States), converting iron into steel or hard metal, and plating, coating, hardening, and tempering iron and steel.

The following have obtained Provisional Protection for their Applications for Patent:—No. 1596, LIMET, Paris, furrowing metals and cutting files, &c.—No. 1823, FOURNEL, Nancy, iron and cast-iron.—No. 1962, PICKERING, Stockton-on-Tees, hot-blast.—No. 1970, BODMER, Newport, cement, concrete, and artificial stone.—No. 1978, PARAF, Manchester, deoxidation and precipitation.

The following Patents have been Sealed:—No. 668, BERRY, Calder Dale Ironworks, near Halifax, steam-hammers.—No. 736, BAKERWELL, Hampstead, railway lifting rods and sub-stations.—No. 750, FURNESS, Sheffield, puddling and converting furnaces.—No. 759, DOXISTHORPE, cutting coal.—It appears from the "Commissioners of Patents' Journal" that GERSTENHOFER, of Freiberg, Saxony, has paid the seventh year's duty on his patent, No. 2245, for furnaces for roasting pyrites.

T. L. NICKLIN's specification, No. 3136, relates to puddling, heating, and other reverberatory furnaces used in manufacturing iron and steel, and for other purposes; these he constructs in such manner as to utilise the air heated between the outer walls or plates and the jamb, back wall and bridge-plates, by conveying such air to the fire-bricks, and also to the interior of the furnace, thereby effecting consumption of the fuel.—ENSELL's patent, No. 3267, relates to smelting copper, and in obtaining products from the gases and vapours given off during smelting. The specification describes the employment of what he terms a gaseous fuel—that is to say, gaseous products obtained by burning coal in a furnace or chamber, with a limited supply of air or the gaseous products of coal obtained by destructive distillation of coal in closed vessels or retorts. The gaseous fuel thus obtained is conveyed through a flue or pipe into an ordinary reverberatory or other furnace, and when the said gaseous fuel has entered the furnace it is allowed to mix with atmospheric air or oxygen; immediately these matters come in contact, combustion takes place. The air is allowed to enter through openings in the furnace under ordinary atmospheric pressure, or the air may be forced in by a fan or other means, so as to enter at a pressure above that of the ordinary atmosphere. Ordinarily, the patentee considers it sufficient to admit the oxygen and gaseous fuel through the openings without forcing them in under pressure; but, if desirable, pressure may be used to force the same into the furnace. The patentee also employs oxides of iron to collect or fix the products of smelting. Patents of the above description deserve especial attention at present, as the question of the coal supply presses on the national consideration. It is useless to disguise the fact that the possibility of an exhaustion of our coal fields, or—to say the least—the possible difficulty and expense of working them under new structural or physical conditions, may well give rise to uneasiness. As the specific recently proposed in these columns by a "Colliery Engineer" is not of a character to induce immediate adoption, some more practical remedy than his should be sought. It is foolish to bewail the possibility of exhaustion of coal, or to waste time in examining its causes, or in proposing fanciful schemes for its remedy. It is wiser to investigate with gravity and experienced intelligence the nature and feasibility of means proposed for economising the coal supply at present available. Indeed, whether the coal fields threaten exhaustion or not, it is assuredly worse than imprudent to waste fuel in the extravagant mode habitually practiced in our metallurgical and other industrial furnaces. Every care should be concentrated in the object of evoking, so to speak, from the carbonaceous mass its greatest heating power with the least possible waste. The French, possibly urged to a consideration of the question by a comparative paucity of coal field, have long turned their attention to what they have described as gasifying furnaces. Some years ago, a patent of this nature, one of the early "gasifying" fuel patents, was taken in the name of Mr. Henry, patent agent, Fleet-street (as a communication from Jardin and Goussard). It is agreeable to find that the attention of inventors is again directed to the subject, and it would be interesting, therefore, to learn whether successful practical results of

importance have attended trials of the gaseous fuel system projected by Mr. Ensell.—A reference to M. MARCAIS' mode of obtaining tin ores recently appeared in this Journal. M. Marçais has recently visited this country in reference to his patented plan. The specification is not yet published.—The treatment of pyrites containing copper and tin has recently formed the subject of a patent, No. 3257, taken out by Mr. PENGILLY, of Falmouth. The specification refers to sulphurous and arsenical pyrites. Mr. Pengilly proposes to employ two furnaces—an upper and a lower; he recommends a length of 10 ft. for the former, and a length of 40 ft. for the latter. The upper furnace is so disposed at the end of the lower, that ores treated in the upper one may be heated with the fire from the lower one, and the ores are let down into the latter at the end farthest from the fire-place. The ore, as obtained from the mine, is put into the upper, stirred continuously by mechanical appliances, and only a sufficient supply of cold air is admitted to sublime the volatile sulphur. The ores from the upper furnace are let into the lower furnace, and subjected to mechanical agitation, until they reach the end nearest the fire-place, or until the whole of the arsenic is sublimed; the furnace is arranged to contain four charges from the upper one, each charge being at a separate stage of the process. If the ores do not contain sufficient sulphur for the sublimation of the arsenic, an ordinary rotating tin calciner is substituted for the two above-described furnaces. The fumes from such calciner are passed through tubing of iron or other material carried to some distance from the calciner; the same thing may be done with the fumes from the two previously-described furnaces. By these means, the extraneous matters are more effectively separated from the arsenic. Near the fire-place is a boiler, containing water heated to from 180° to 200° Fahr., and maintained at that temperature. The ores when freed from the sulphur are drawn out of the furnaces into shallow granite cisterns, of circular form, and, at the same time, the water at 180° to 200° Fahr. is introduced, and the ores are crushed to a powder in the water by a revolving granite wheel. The water flowing from the cistern is filtered, and the copper is precipitated in the usual way.

REPORT FROM SCOTLAND.

GLASGOW, SEPT. 5.—The Pig-Iron market has steadily improved this week, and prices have advanced 1s. 3d. to 1s. 6d. per ton, and a considerable business has been done in shipping iron at these prices. The operations in open market partake of a more cheerful tone, and with money at 5 or 6 per cent., the general trade of the country is expected to improve, and carry iron along with it. In the stocks there is a reduction of 43,000 tons for the month last past, and the ratio of diminution is being maintained. In the Glasgow stores there are 442,433 tons at present, against 348,876 tons at the same period in 1865; while at Ardrossan there are only 90 tons, against 16,928 tons in 1865. It will be thus seen that the stocks are being rapidly reduced; and as there are only 87 furnaces in blast at the present time, as compared with 135 at the corresponding period of 1865, stocks must go on decreasing until the present overplus of "warrants" are either absorbed by shipments or are taken into consumption, as there is yet no motion on the part of the ironmasters to re-light their extinguished furnaces. For the week just ended, the shipments are 734 tons over the same week in 1865; the proportions being, this year 14,666 tons; last year, 13,932 tons. Slight as this increase is, it is on the right side, and reduces the decrease on the year to 85,093 tons. To-day a temporary damper was thrown over the iron trade by the appearance of the name of the proprietor of the Phoenix Foundry in the list of sequestrations. At the meeting of the creditors of this firm, it will be recollected that the creditors accepted of the composition offered by the company—10s. in the pound; but it turns out now that one firm of creditors was unrepresented at the meeting when the agreement was entered into, and their non-acquiescence in the offer has sent the firm into the Gazette. The liabilities of the proprietors of the Phoenix Foundry, at the time of the stoppage, was 243,748£. Creditors representing fully 225,000£, having concurred in the arrangement, it is regretted that one firm, having only a small claim, should have had the power to overrule the concurrence of the great body of the creditors. Messrs. Bolekow, Vaughan, and Co. (Limited), Middlesbrough, are reported to be the non-acquiescing firm, with a claim not greatly exceeding 14,000£. The name of Joseph Rowell, iron merchant, Aberdeen, also appears among the sequestrated. To-day about 10,000 tons were done at 55s. 4½d. to 55s. 7½d. cash, 55s. 10½d. to 56s. a month; sellers over at the close at 55s. 7½d. cash, buyers 55s. 6d. There is a better feeling amongst the makers of Malleable Iron, and the few additional orders which have been placed this week has given rather more buoyancy to the trade. Blochairn Malleable Works, which were expected to have commenced this week, have not been completely transferred into the hands of the new firm—that of Mr. Hannay—said to be the son of the junior partner of the firm of Schneider, Hannay, and Co., Liverpool. In castings and ironfoundry a fair business continues to be done, without change in prices.

Coals are in good demand, without variation in price, but as determined efforts are being made by the colliers to get up their wages to 5s. a day for the eight hours' work a rise cannot be far off. There is some talk about importing miners from Cornwall, where there is said to be great numbers in want of occupation, and undoubtedly, there is "room and range enough" for a few thousands in the coal fields throughout Scotland. Till once labour becomes more abundant, or mechanical appliances are substituted for the refractory operators now engaged, there will be little rest from systematic and harassing demands. The shipments are 11,000 tons short on the week, 25,235 tons being all the amount this week, against 36,285 tons in the same week last year. This is a discrepancy, and a deficiency which is ominous enough.

The Glasgow Jute Company (Limited) have intimated a dividend of 11 per cent., free of income tax, adding 6000£ to the reserve fund, and carrying 3724£ to next account.

In the shipbuilding trade the attitude of the carpenters in continuing on strike after the other shipyard artisans have commenced operations, has determined Messrs. Scott and Co., Greenock, to dispatch their new screw-steamer, *Achilles* (for the China trade) to have her carpenter work done at Liverpool; and Messrs. Caird and Co. intend forwarding to a continental port the large new screw-steamer, *Deutschland*, to have her fittings, &c., completed.

REPORT FROM MONMOUTH AND SOUTH WALES.

SEPT. 6.—The gloom which for so long a period hung over the Iron Trade of this district has, to a great extent, passed away, and the further reduction in the rate of discount has created quite a cheerful tone among all parties. The general feeling is that it will eventually fall to 4 per cent., and many buyers, acting on this belief, are not so farward in entering into transactions. Whether this be wise on their part is a question, as prices have already an upward tendency—in fact, in some instances, an advance has been asked and given, and there is a probability that a general rise will take place before long for Welsh iron. Whilst the easement in the Money Market, and a renewal of confidence has brought sunshine to makers, it has also happily been the means not only of stopping the proposed curtailment in operations at the works, but of checking the mania for emigration which had strongly set in among the workmen and their families in several parts of the district, so that when operations become more active at the several works, there will not be such a scarcity of labour as a week or so since was anticipated. On home account a few transactions have been entered into during the past few days, and future prospects become almost daily more reassuring, although, from the heavy blow the commercial world has received from failures, &c., many parties will not for some time be in a position to place orders which otherwise they would be only too glad to give out. In the foreign trade business has, during the week, again moved a little, but not to any material extent. The American advances continue encouraging, the enquiry being very good. Transactions with the provinces of British North America are satisfactory, and the autumn trade looks promising. With the markets of South America business is somewhat inactive, and the enquiry is limited. The reduction in the price of money cannot fail having a considerable effect upon trade with the East, which shows signs of renewed animation. The Baltic shipping trade is approaching towards its close; there are, however, several contracts under hand, which are being pushed forward, and two or three cargoes of rails have, in the course of the week, been cleared out at the local ports for Northern Europe. Business is beginning to revive with Italy, which has always been a good customer, and a few orders have come to hand from the other continental markets. There is a slightly improved enquiry for Welsh pigs, but no change of any importance has taken place in quotations. For tin-plates there is more vitality in the demands, and the prices realised are remunerative to makers. The steam coal collieries are actively employed, and whilst considerable quantities are being exported to the foreign markets, and for marine purposes, the tonnage sent inland is largely increasing. The demand for house coal is about the same as last week.

At the South Wales Colliery Company (Limited) extraordinary general meeting, held at their offices, Ethelburga House, Bishops-

Up to 32 years ending 1717 was *est. 68, 50, 50*. Until about the year 1718 copper was dug from tin mines only, and was not used for coins. In 1717 was *not until the year 1717, the date at which Sir Isaac Newton, then in his 75th year, resigned his post as Master of the Mint* that copper money was first coined from British copper, at 15½d. per lb., or 147½ per ton. Up to this period it had been necessary to import copper from Sweden at 18d. per lb., or 168½ per ton, in order to supply material for the English coinage. From 1726 to 1735, 6900 tons of copper ore were raised annually from Cornish mines, which produced from 800 to 1000 tons of copper. It may be a little startling to the generality of Englishmen to be told that in the days of their grandfathers and great-grandfathers the British rebel was penetrated as far as Derby, when a large broad cloth coat lasted 40 years, and his wife's best dress and lincey-woolsey skirt were worn from her marriage to her death, that all

of copper-ore-kettles, saucers, pots, and other culinary articles, rough and unshaped, as they might be, were imported into this country from Hamburg and Holland. These were procured by the Dutch from the manufacturers of Nuremberg and other parts of Germany; and even the brass pans used by the English farmers were obtained from the same sources, while the Flemings wove useful cloths in the middle of the reign of our second George that the English spirit was thoroughly roused; and that Englishmen began to feel the imperative necessity of fully developing the mineral resources of their own country, and the capacity of skill and talent of the mechanic and the artisan.

In 1720 the price of copper was 190l. per ton, but by the increased supplies it had been reduced to the end of 1772 to 100l. per ton, so that prices constantly varied according to demand. The next year new copper mines were opened in Derbyshire and Wales, and prices again fell, until 1781, when the opening of a Cornish mine paid only 79l. per ton for cake copper. This immense reduction in the price of copper was the result of misunderstanding which existed between the adventurers of the Parys Mountain Mine, in Anglesea, and the Cornish copper producers. In those days no great public roads had been made except those connecting large towns, and copper ore was carried from the mines to the seaport towns on the backs of mules; in West Cornwall a common wagon or a gentleman's carriage had never been seen, and such a luxury as a piano-forte had never been heard of in the Far West.

In 1790 the price of copper was 84l. per ton, but this year England exported 5406 tons of copper, and brass and plated goods to the value of nearly 569,000l.; and Cornwall, notwithstanding competition and low prices, had considerably increased the number of her mines. The consumption of copper had also largely increased from the sheathing and fastenings of ships now first made of this metal; still a great outcry was caused among copper producers by the continued low prices. The smelters, who chiefly controlled the markets, bought the ores at a fixed price; the adventurers got discontented, and a few smelters who were not at the agreements refused to be bound by the rest. Some smaller smelters, however, bought copper ore at public sales, but the state of things was not improved until the Birmingham Mining and Copper Company was established. This company joined the smaller companies, and the old method of sale by ticketing was revived. This caused prices to improve. In 1792 copper again sold for 100l. per ton, and in 1799 it rose to 124l.

It may be interesting here to remember the quantities raised during different years in Cornwall. In 1775 about 2650 tons of fine copper were raised; four years later, 3000 tons; eight years later it had increased to 5093 tons; and in 1799 it was 5427 tons; so that in seventy years the annual returns had risen from 750 to 5427 tons.—*Western Morning News.*

MINING NOTABILIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

EAST WHEEL LOVELL is looking well throughout, and indeed, as will be seen by the manager's report this week, "the more it is opened on the more permanent it looks for important discoveries of tin are daily expected. The different veins to value are now even 160l. to 170l. per fathom. This alone speaks for itself.

EAST BASSET they will commence driving the 130 west in about six weeks, when it is quite expected a course of copper ore will be cut, looking at the fact that they went over 40 fathoms of ore ground in the 120, where it was chiefly in the bottom of that level.

EAST CARN BREA.—This valuable mine is looking well: the lode improving, the sampling a good one, and the standard for copper rapidly going up. A bright future may be safely anticipated.

PRINCE OF WALES.—I have inspected this mine, and I find that they have taken down the lode close to the present end, and I find it from 3½ to 4 feet wide, worth full 4 tons, or 36l. per fathom, and looks promising for further improvement—a splendid-looking lode. There is a branch of ore coming in from the south side, which will fall in with the lode in a few feet further driving, when there is no doubt it will greatly improve it.

NORTH DOWNS.—The cloud that has been hanging over this mine is now rapidly dispelling, and this, like some other copper mines in Cornwall, is about to reap the double advantage of a higher standard for copper on increased quantities of ores. In prospecting the cross-cuts a very favourable and unexpected discovery was made, a lode, which is new to the district, having been met with, which produces yellow copper ore of good quality. In the 40 fathom level it is valued at from 15l. to 16l. per fathom. In the slope or rise above this level it is worth 12l. per fathom, and is likely to improve. The same lode has been seen in the 50, and is also productive at this level, although not yet under the 114, west of engine-shaft, a good course of ore has been found, and two winzes are now being sunk below this level, where the lode is worth 40l. and 25l. per fathom, respectively. In the 126 west the end is within 10 fms. of where the lode became productive in the 114, and this point will be reached in a very short time, and should the lode be cut rich, of which there is no doubt, the value of the property will be greatly increased. The district is undeniable, and bearing in mind that at this depth Great Wheel Vor became so productive, it must be patent to everyone that a great future is in store for Great Wheel Fortune.

SOUTH WHEEL LEISURE.—Reports upon this property by the most eminent mining authorities will be ready for circulation amongst the shareholders in the course of a few days; meanwhile preparations are being made for the setting of the cross-cut driving south to intersect the tin lode, the accomplishment of which will probably make this already valuable property second to none in the country.

EAST WHEEL LOVELL, about one mile south of the renowned Old Wheel Lovell, which during the last thirty years has returned upwards of 150,000l., is at present drawing the interest of the district, in the different parts, the prospects having become of a far more cheering character as its development has progressed. East Lovell has passed through various vicissitudes, but is, under the present management, being worked judiciously and economically. The sudden depreciation in the value of the shares a few months since, was attributable not to any falling off in the mine itself, but to the state of the market, tin having been at such a very low figure.

GREAT WHEEL FORTUNE.—The prospects here are very encouraging, and those who have lately purchased shares have good reason to congratulate themselves on their investment. The unproductive ground has been got through, and a splendid lode is being opened up in the 114 and 126 fms. levels. In the 114, west of engine-shaft, a good course of ore has been found, and two winzes are now being sunk below this level, where the lode is worth 40l. and 25l. per fathom, respectively. In the 126 west the end is within 10 fms. of where the lode became productive in the 114, and this point will be reached in a very short time, and should the lode be cut rich, of which there is no doubt, the value of the property will be greatly increased. The district is undeniable, and bearing in mind that at this depth Great Wheel Vor became so productive, it must be patent to everyone that a great future is in store for Great Wheel Fortune.

NORTH DOWNS.—It must be gratifying to the shareholders in this mine to find that the vigorous operations which have been carried on have at length resulted in a great improvement in the 40, east of King's shaft, where the lode is worth 10l. per fathom, so far as taken down. They are now driving by the side of the lode, in order to take it down without waste, and when the lode is again cut into it will, no doubt, be found to be still further productive. This lode is whole to surface, and is a parallel course of ore to the one from whence many dividends were declared. The agent hopes to meet the next three months' tests from the returns of ore, and should the mine still further improve, it will not be long before North Downs resumes its old place in the Dividend List.

GRAMBLER AND ST. AUBYN.—This mine is likely again soon to raise attraction. The lode in the engine-shaft is changing its character, getting more congenial for making a good house of ore. The end in the 72 is also headed to No. 1 winze, where the lode is worth 8l. per fathom; and looking at the productivity of the pitches above, and the falling in of some branches or feeders, profitable ground must be opened out in a short time. The produce of the ore sold at the last sale was 11½l. The mine is in only 486 shares, and is worked by a staff second to none for economy in the county of Cornwall.

BEDFORD UNITED.—These mines have paid dividends for nearly 20 years, and have made only one call since. The company is likely again to enter the Dividend List with the advance of copper, and good indications at the north lode. The mines are well managed, and the property one of the best now working.

NEW EAST RUSSELL.—Operations here are going on satisfactorily. There is a good pipe (say, 20 tons) of rich ore, which they talk of making 30 tons by October. Important discoveries are expected at several points; the mine is well bed, and in a position for good results. There is water-power for all purposes. The call just made will, with the ore money, carry them on for some time.

GAS-LIGHT, DOCK, WATER-WORKS, AND INSURANCE COMPANIES.—Messrs. W. L. Webb and Co. (Finsbury), in their "Stock and Share Markets Circular," say—"We have to record but few operations in gas shares during the past week; however, although little business has been transacted, prices remain firm. London and St. Katherine Docks stock has improved to 69, 70 (ex div.), business having been done last account at 66; there is every probability of a further rise, as this stock is in moderate request. Chelsea Water-Works shares are quoted after at about 28½ to 29, and East London have experienced but little improvement, remaining at 123, 124, with a few sellers on the market. In insurance shares the dealings were comparatively nominal."

BIRD.—Of erysipelas, at the Cosmopolitan Hotel, San Francisco, on July 14, Mr. WILLIAM PETERICK, the well-known civil and mining engineer. Capt. Peterick was for a considerable number of years a resident of Kewenaw Point, Lake Superior, and was agent of the Copper Falls and other mines. He had an ardent pride in his profession, and was an expert in all matters relating to power and machinery for mines. He was eminently cosmopolitan in his tastes, having travelled in many lands on professional business, whereby he acquired a rare fund of information, which he applied with unobtrusive propriety and discretion.

MR. EDWARD BREWIS, having just returned from a tour in Paris and Northern France, will be most happy to receive particulars of Mining Companies in Cornwall, Devon, Northumberland, and Great Britain generally, for a circular about to be issued, and which is now in preparation. Particulars to be sent early to 8, Warford-court, Throgmorton-street, London. Bankers, National Bank, Old Broad-street. All orders to Buy or Sell executed as usual. August 21, 1866.

MR. JOHN BATTERS, STOCK AND MINING SHAREBROKER, 13, THROGMORTON STREET, LONDON, E.C.

MESSRS. WILSON, WARD, AND CO., STOCK AND SHAREDEALERS, 16, UNION COURT, OLD BROAD STREET, LONDON, E.C. Messrs. Wilson, Ward, and Co. are DEALERS in the FOLLOWING SHARES, at market prices:—Finsbury and Eolivia Gold, Great Laxey, Calbeck Fells, Penzance and Lomax, New Wheal Towan, and North Trekerby. Can recommend good mines for investment. Their fortnightly Circular may be had on application.

MR. WALTER TREGELLAS, 122, BISHOPSGATE STREET WITHIN, continues to deal, at close market prices, in all good sound DIVIDEND and PROGRESSIVE MINES, either for cash or the account.

COPPER SMELTERS.—WANTED, in America, TWELVE ENGLISH COPPER SMELTERS.—For further information, apply, by post, to "N 20," Liverpool Post-office.

TO IRONMASTERS, &c.—The ADVERTISER, who has had above twenty-five years' experience in the manufacturing of rails and merchant bars, is OPEN to an ENGAGEMENT as OUT-DOOR MANAGER; he is also his own engineer. The highest references will be given. Apply to "A. B.," Hill Side House, Long Ashton, near Bristol.

TO ALL INTERESTED IN MINES.—A METALLURGIST, having discovered a cheap and easy method of extracting the precious metals from minerals, clays, &c., will, in order to further test the practicability of the discovery, ANALYSE, FREE OF CHARGE, any MINERALS, &c., supposed to contain such, upon a sample of not less than 7 lbs. weight (carriage paid) being sent to Messrs. ANDERSON, BAKER, and CO., 66, Basinghall-street, London, E.C.

THE METAL TRADE.—A WELL-ESTABLISHED HOUSE in AMSTERDAM, having good connections with Metal Dealers and Manufacturers in Holland, would be glad to UNDERTAKE the SALE of METALS, MACHINERIES, and TOOLS, upon commission, for first-rate houses in England. References of the highest respectability are offered.—Address, "H. H.," prepaid poste restante, Amsterdam.

TO METAL BROKERS.—A Man of thorough practical experience in the Metal Trade is DESIROUS of OBTAINING an APPOINTMENT in a METAL BROKER'S ESTABLISHMENT. Good references.—Apply "M.," 53, Elm-street, Roath, Cardiff.

IRON ORE AND IRONSTONE.—A GENTLEMAN, thoroughly acquainted with most of the English and Foreign Iron Ores, is DESIROUS of OBTAINING an AGENCY for the SALE of FIRST-CLASS QUALITIES, either on commission or otherwise. Unexceptionable references.—Address, in the first instance, to "Yield," care of Editor of the MINING JOURNAL, 26, Fleet-street, London.

A GENTLEMAN having an extensive connection with merchants manufacturers, and others, would be GLAD to UNDERTAKE the SALE of PATENTED ARTICLES or INVENTIONS, upon commission.—Apply to Mr. W. T. RAWLE, patent and mining agent, 8, Small-street, Bristol.

WANTED, by the Advertiser, a young man, a SITUATION as ACCOUNTANT. Is conversant with mining and other accounts. No objection to go abroad. The highest testimonials as to character and ability.—Address, "B.," Post-office, Tavistock.

WANTED, a 70 in. cylinder ENGINE, with PITWORK, &c. Address, with particulars and price, to Mr. THOMAS THOMPSON, Great Laxey Office, 12, Old Jewry Chambers, London, E.C.

TO WAGON AND OTHER COMPANIES.—TO BE SOLD, BY PRIVATE TREATY, SEVERAL ACRES OF LAND, adjoining CONGLETON STATION, NORTH STAFFORDSHIRE LINE. Address, Mr. J. H. WILLIAMSON, Goldenhill, Stoke-upon-Trent.

TO CAPITALISTS.—TO BE DISPOSED OF, BY PRIVATE CONTRACT, SPEARHEAD CONSOLS MINE SETT and MATERIALS, consisting of a 26 in. cylinder PUMPING ENGINE, 20 in. WINDING ENGINE, 150 fms. of pitwork, skips, &c. With a moderate outlay this would probably become a valuable property, being bounded by Botallack, Levant, Spearhead, and East Levant Mines.—For particulars, apply to Mr. JAMES B. COULSON, Penzance, Cornwall.

TO CAPITALISTS, CONTRACTORS, &c.—TO BE LET, OR SOLD, a QUARRY of superior MILLSTONE GRIT, in NORTH WALES, within 400 yards of a railway.—For particulars, apply to Messrs. WOODHOUSE and JEFFCOCK, Derby, or 11, Great George-street, Westminster, S.W.

TO RAILWAY CARRIAGE BUILDERS, AND OTHERS.—TO BE DISPOSED OF BY PRIVATE TREATY, a WORKS AND LAND adjoining, having a siding to two principal railways, and water communication. Immediate possession can be given.—Apply, for further particulars, to "S. T.," MINING JOURNAL office, 26, Fleet-street, London.

FOR SALE, at WHEEL SIDNEY, PLYMPTON, a 56-inch cylinder STEAM PUMPING ENGINE, 10 ft. stroke in cylinder, and 9 ft. in shaft, with ONE BOILER, about 11 tons; also, 18-inch cylinder STEAM DRAWING ENGINE, with cage, complete.—Apply to Capt. W. EDWARDS, on the Mine.—Sept. 5, 1866.

DIVING BOAT FOR SALE, built of iron. Will hold 14 men and their tools, and remain down 12 hours. Has been employed in the Harbour Works of Cherbourg, Brest, and Havre, and will be found invaluable to Contractors for the making of Docks or laying foundations of Bridges.—For further particulars and drawings, apply to S. STEELE and Co., 90, Great Tower-street, London, E.C.

THE MINING JOURNAL.—COPIES OF THE MINING JOURNAL, from 1852 to end of 1865, in good condition, TO BE SOLD a bargain.—Offers to be sent to "A. B.," Mr. Cleaver, 18, Commercial-road, S.

TO BE LET, at LISKEARD, for three or six months, from 1st of November, a CONVENIENT HOUSE, well furnished, containing two sitting rooms, five bed rooms, and good kitchens. Within five minutes' walk of the station.—For particulars, apply by letter to "M. C.," Post-office, Liskeard.

FOR SALE, the FOLLOWING SHARES:—100 Gwydyr Park, 1s. 6d., worth buying; 250 Dale, 3s. 10d.; 50 New Crow Hill, 13s. 6d.; 100 So. Callington, 22s. 6d.; 20 Gotherie (fully paid), £2½; 150 Rosa Grande, 2s. 6d.; 50 Frontino, 8s. 6d.; 50 Prince of Wales, 22s.; 50 West Wheal Kitty. Apply to Mr. R. EMERSON, 1, Pinner's-court, Old Broad-street, London. Advice given on the sale and purchase of shares. Eighteen years' experience in Cornwall and twelve in London.

SOUTH CALLINGTON MINE.—Mr. R. EMERSON begs to call the attention of his friends to this mine. A considerable rise may soon take place, and as a sound investment he thinks very favourably of it. 1, Pinner's-court, Old Broad-street, London.

WEST WHEEL KITTY.—MR. R. EMERSON has made himself perfectly acquainted with the market for these shares. No one should act without his advice, either as Buyer or Seller. 1, Pinner's-court, Old Broad-street, London.

MR. R. EMERSON is in a position to SUPPLY his friends with a FEW SHARES in a TIN and COPPER MINE, situated near the celebrated St. Ives Consols (which, on an outlay of only £8 per share, has paid £190 10s. per share in dividends), and which he strongly recommends. A gentleman who sent his own agent to inspect the property has taken one-half of the shares, and has allowed his agent's report to be printed, a copy of which Mr. EMERSON will be glad to forward to any intending purchaser. 1, Pinner's-court, Old Broad-street, London.

MR. WILLIAM MARLBOROUGH, 1, GREAT ST. HELEN'S, BISHOPSGATE STREET, LONDON, E.C. (Established 12 years), has FOR SALE the FOLLOWING SHARES, at net prices:—
25 Chilverton Moor, £6½. 60 Frontino, 10s. 9d. 10 Clifford, £13½.
5 East Basset, £18½. 80 Prince of Wales, 23s. 6d. 50 Chontales, ¼ prem.
100 West Kitty, 7s. 9d. 10 St. George, 34s. 3d. 25 No. Trekerby, £2 18 9
15 East Lovell, £11½. 15 Cook's Kitchen, £6½. 20 E. Carn Brea, £2½.
5 Great Vor, £26½. 60 St. Retallack, 13s. 6d. 20 Marke Valley, £2 3 9
15 East Caradon, £8 6 3. 3 West Chilverton, £62½. 1 West Seton, £142½.
1 Wheel Seton, £174½. 10 Great Laxey, £19. 5 Wheel Buller, £20½.
5 St. Ives, £6. 25 Wh. Grenville, 2½s. 6d. 25 East Grenville, £2½.
50 Crebor, 16s. 9d. 50 East Russell, £13 9. 20 Stray Park, 39s.
60 North Downs, 8s. 6d. 50 Gonamena, 11s. 3d. 20 Frank Mills, £2 18s. 9d.
50 New Lovell, 10s. 3d. 30 Pendon, 3s. 9d. 5 Tresavean, £6½.
15 Wheal Chilverton, £5. 25 North Crofty, 28s. 3d. 30 Wheal Uny, 18s. 6d.
5 South Crofty, £15½. 5 Providence, £29. 40 Calbeck Fells, 4s. 6d.
10 North Trekerby, £4. 50 Drake Walls, 11s. 3d. 5 West Caradon, £6 1 3
5 West Tolve, £26. 25 West Frances, £9½. 20 E. Rosewarne, 10s. 6d.
25 Rosewarne Con., 10s. 9d. 35 Rosewarne Con., 8s. 6d. 50 Mineral Rights, 14s. 6d.
10 Dyrwyn. 40 Camborne Vean, 25s. 6d. 50 Camborne, 25s. 6d.

Mr. MARLBOROUGH strongly recommends the Finsbury Park Freehold Landed Estate and Brickmaking Company as a first-class investment. No doubt can be entertained of the profits named in the prospectus (see this day's Journal) being realised. Mr. MARLBOROUGH is in a position to secure a limited number of shares for his clients at par.

MESSRS. C. THOMAS AND CO., CIVIL AND MINING ENGINEERING OFFICES, POOLFOLD CHAMBERS, CHAPEL WALKS, MANCHESTER, AND REDRUTH, CORNWALL.

MR. J. P. ENDEAN, STOCK AND SHAREDEALER, BRITISH AND FOREIGN MINING AGENCY, OFFICES, 5, FINSBURY CHAMBERS, LONDON WALL, E.C., LONDON.

JOSEPH TAYLOR AND CO., FINANCIAL, MINING, AND GENERAL AGENTS, 17, CROSS STREET, MANCHESTER. DEALERS IN MINING AND OTHER SHARES.

MR. G. D. SANDY, STOCK AND SHAREDEALER, No. 48, THREADNEEDLE STREET, LONDON, E.C., TRANSACTS BUSINESS IN EVERY DESCRIPTION OF STOCK EXCHANGE SECURITIES, MINING AND FINANCIAL ENTERPRISES, at close market prices. Correct Daily Price List may be had on application. Money advanced to any amount on legitimate stocks and shares. References exchanged.

MR. G. D. SANDY'S INVESTMENT CIRCULAR.—SPECIAL NOTICE.—Fide all hitherto published. 48, Threadneedle-street, London, E.C., Sept. 7, 1866.

MESSRS. MCNEILL AND LONG, STOCK, SHARE, AND MINING DEALERS, 7, POPE'S HEAD ALLEY, LOMBARD STREET, E.C. Bankers: Alliance Bank.

Memorial to the late Nicholas Wood, Esq.

MEMORIAL TO THE LATE NICHOLAS WOOD, ESQ.—At a meeting of friends interested in promoting a memorial to the late Nicholas Wood, Esq., Thomas E. Foster, Esq., Chairman, it was resolved:—That this meeting be adjourned, and that a public meeting of the coal trade and others be called, to be held on Saturday, the 15th September next, at Twelve o'clock noon, in the Neville Hall, Newcastle, for the purpose of considering—first, the nature of the memorial; and to enter into a subscription for carrying the same into effect.

In the meantime, subscriptions will be received by—
R. P. EDGER, } Hon. Treasurers.
J. BUSTIN, }
JNO. TODD, Hon. Sec.,
Hetton-le-hole, Fence Houses.
Coal Trade Office, Newcastle-on-Tyne, August 18, 1866.

Miners' Association of Cornwall and Devonshire.

MINERS' ASSOCIATION OF CORNWALL AND DEVONSHIRE.—THE ANNUAL MEETING of the association will be held at the POLYTECHNIC HALL, FALMOUTH, on MONDAY, the 17th inst., at Two o'clock P.M.
Persons desiring to read papers are requested to forward copies of them to the assistant secretary, Mr. C. LE NEVE FOSTER, Royal Institution, Truro.

Royal School of Mines.

ROYAL SCHOOL OF MINES. JERMYN STREET, LONDON.
THE SIXTEENTH SESSION will COMMENCE on MONDAY, 1st OCTOBER. Prospectuses of the course of study may be had on application to the Registrar, TRENHAM REEKS, Registrar.

LECTURES ON MINERALOGY AND GEOLOGY AT KING'S COLLEGE, LONDON, are given on WEDNESDAY and FRIDAY mornings from Nine to Ten, by Prof. TENNANT, F.R.S. Those on MINERALOGY begin on Friday, the 3rd October, and terminate at Christmas: fee, £2 2s. Those on GEOLOGY commence in January and continue till June. A shorter course of Lectures on MINERALOGY and GEOLOGY is delivered on Wednesday evenings, from Eight till Nine. These begin on the 10th of October, and terminate at Easter: fee, £1 11s. 6d. Mr. TENNANT accompanies his students to the public museums and to places of geological interest in the country.
R. W. JELF, D.D., Principal.

SOUTH WHEEL LEISURE.—FOR SALE, from TWENTY to ONE HUNDRED SHARES, at £1 10s. each.
NEW CLIFFORD—FIVE SHARES, at £2 5s. each.
ST. BRIDE'S SLATE—FIFTEEN SHARES, at £1 each.
Apply to "Excutor," MINING JOURNAL office, 26, Fleet-street, London.

THE NEW CRIDDIS MINING COMPANY, in the parish of PADSTOW, CORNWALL. In 1200 parts or shares.—A FEW SHARES in this promising adventure may be had on favourable terms.—Apply to Capt. RICHARD RICH, of Bodmin, the agent; or to JAMES CARTER and SON, share-brokers, Nottingham.

GOTHIC MINE.—WANTED, FIFTY SHARES, at 45s. (fully paid up); or, state lowest terms for cash, and number of shares.—Address, "Speculator," MINING JOURNAL office, 26, Fleet-street, London, E.C.

MARY ANN.—WANTED TO BUY, THREE SHARES, for cash.—Address lowest price to Mr. ISAAC CARTER, 4, South Molton-street, Hanover-square, London.

GREAT NORTHERN COPPER MINING COMPANY OF SOUTH AUSTRALIA (LIMITED).—Notice is hereby given, that the directors have MADE a CALL of SIXPENCE PER SHARE on the shares of this company, payable at the Consolidated Bank, 52, Threadneedle-street, London, on or before Monday, the 8th day of October next.
1, Charlotte-row, City, London, Aug. 30, 1866. T. HANCOCK, Manager.

CONORREE MINING COMPANY (LIMITED).—Notice is hereby given, that an ORDINARY GENERAL MEETING of this company will be held at their offices, 33, Westland-row, Dublin, on SATURDAY, 15th inst., at One o'clock P.M., for the purpose of submitting the report of the directors and statement of accounts, from the 1st December, 1865, to 30th June, 1866; for the election of two directors and auditors; and for the transaction of the ordinary business of the company.
N.B.—The Transfer-books of the company will be closed from the 1st to the 15th inst., both days inclusive.
By order, GEORGE DEDRICKSON, Secretary.

33, Westland-row, Dublin, Sept. 1, 1866.
MR. D. STICKLAND, M.E., having had upwards of 40 years' mining experience in Cornwall, several years of which he has had the entire management of mines therein, enables him to GIVE GOOD ADVICE thereon.
MINES INSPECTED and faithfully REPORTED ON. DEALER IN MINING, RAILWAY, and OTHER SHARES.
Temporary Offices, 5, Finsbury-street, London.

BRITISH AND FOREIGN INVESTMENT.—MR. THOMAS SPARGO, STOCK, SHARE, AND MINING BROKER, 224 and 225, GRESHAM HOUSE, OLD BROAD STREET, LONDON, E.C., TRANSACTS EVERY DESCRIPTION OF BUSINESS in the PURCHASE and SALE of SHARES in BANKS, CANALS, MINES, RAILWAYS, BRIDGES, INSURANCES, and ALL OTHER DESCRIPTIONS OF BRITISH and FOREIGN STOCK.

Mr. SPARGO has for sale shares in English mines paying from 12 to 20 per cent. upon the present price, in bi-monthly and quarterly dividends, as also a number of shares in good progressive mines, some of which he with confidence specially recommends to the public as sound investments.

Mr. SPARGO gives every information as to position and prospects of all mining undertakings, upon application, either personally or by letter, and is enabled, through his long experience, aided by his monthly visits to Cornwall, Devon, and Wales, to obtain the most reliable information as to the numerous mines in those districts. He will at all times give the best advice as to investments in mines, and, if necessary, inspect them himself; as in all cases he wishes to be guided by the intrinsic value of the property. Upon the receipt of 5s. he will furnish a selected list of dividend and progressive companies.

Mr. SPARGO has published the following works, viz.:—
Statistics and Observations upon the Mines of Cornwall and Devon, 1859—2s. 6d.
Ditto ditto ditto ditto ditto 1860, price 2s. 6d.
Ditto ditto ditto ditto ditto 1862, price 5s.
Ditto ditto ditto ditto ditto 1864, price 5s.
Ditto ditto ditto ditto ditto 1865, price 5s.

Physical, Geological, and Parish Map of Cornwall. Scale, three miles to an inch. Printed in three colours, showing distinctly the mining districts, the height of the hills, &c. Price 10s. 6d., on cloth and rollers.
Geological Maps of the various mining districts, showing the boundary line of each mine, with the lodes, cross-courses, and elvan courses by which it is traversed. Price 2s. 6d. each.

A Model, or Relief, Map of Cornwall (6 ft. 6 in. by 5 ft.), presenting the names of every town and village, as also every characteristic point of the county. Price 25 5s.

Dividends received, calls paid, and all orders promptly negotiated.
Commission 1½ per cent.
Mr. SPARGO has 20 years' experience of mining, ten of which he was engaged in practical mining, and ten years he has transacted business in mining shares and stock, at 224 and 225, Gresham House, Old Broad-street, City, E.C.
Mr. SPARGO'S Statistics for 1866 are now ready.
Bankers: Consolidated and Metropolitan and Provincial Bank (Limited).

NOTICE OF REMOVAL.

MESSRS. TREDINNICK AND CO., DEALERS IN STOCKS AND SHARES.

MR. RICHARD TREDINNICK, MINING ENGINEER AND CONTRACTOR.
MR. THOMAS TREDINNICK, SCRIVENER.

OFFICES.—ST. MICHAEL'S HOUSE, CORNHILL, LONDON.
The business hitherto conducted at 78, Lombard-street is transferred to the above address.

Stocks, Shares in Banks, Railways, Canals, and Insurance Companies dealt in, and Money Advanced upon all sound Securities. Principals alone treated with.

TO MINE, SLATE QUARRY, AND RAILWAY COMPANIES.—CAPT. C. WILLIAMS is NOW OPEN to UNDERTAKE ALL KINDS OF CONTRACTS, such as DRIVING LEVELS, SINKING SHAFTS, CONSTRUCTING WATER COURSES, CANALS, TRAMWAYS, &c., and ERECTING ALL SORTS OF MACHINERY for MINING and OTHER PURPOSES, having on hand at all times a first-class staff of miners and machinists, who will proceed to any part of the world upon the shortest notice.
N.B.—In all cases 30 per cent. will be left in hand until the work is complete.
Tyn-y-Wern, Taliesin, via Shrewsbury.

MR. CHAS. BAWDEN, ST. DAY, SCORRIER, CORNWALL, having lately inspected several mines in the county, will be happy to ADVISE his CLIENTS before INVESTING, some of which are likely to rise 50 per cent. within the next six months, while others will be altogether avoided. To secure good profits early application should be made.

MESSRS. R. C. CLIFTON AND CO., SHAREBROKERS, ALDINE CHAMBERS, PRINCESS STREET, MANCHESTER.
Mines inspected, and reports furnished. The best practical advice given to capitalists as to investments in mining.
Bankers: National Provincial Bank, Manchester.

PATENTS AT HOME AND ABROAD.—INVENTORS desirous to SECURE INVENTIONS and DESIGNS by PATENT or REGISTRATION, may obtain ADVICE and INFORMATION by applying to Mr. HENRY, Memb. Soc. Arts, Assoc. Soc. Eng., Consulting Patent, Registration, and Copyright Agent, 68, Fleet-street, London, corner of and entrance in Whitefriars-street. Technical translations effected. Drawings and lithographs prepared.

THE FINSBURY PARK FREEHOLD LANDED ESTATE AND BRICK-MAKING COMPANY (LIMITED).

To be incorporated under the Companies Act, 1862, whereby the liability of each shareholder is strictly limited to the amount of his individual subscription.

Capital £60,000, in 6000 shares of £10 each.

£3 per share to be paid on application, and £3 on allotment; and the remaining £4 at one month from date of allotment, making the shares paid-up in full, and leaving no further liability.

Should no allotment be made the deposit will be returned without any deduction whatever.

DIRECTORS.
THOMAS THOMPSON, Esq., 12, Old Jewry Chambers, London—MANAGING DIRECTOR.
WILLIAM TUXFORD, Esq., Director of the Great Laxey, 106, Upper Thames-street.
FRANCIS HOUSMAN, Esq., 5, New-square, Lincoln's Inn.
MATTHEW GREENE, Esq., St. Michael's-house, Cornhill, London.
HENRY L. PHILLIPS, Esq., 32, New Broad-street, London, E.C.
JOHN LESLIE BILKINGTON, Esq., 2, Great James-street, Bedford-row.
 (With power to add to their number.)
BANKERS—The Imperial Bank, Lothbury.
ARCHITECT AND SURVEYOR—James Wagstaff, Esq., 176, Upper-street, Islington.
AUDITORS—Messrs. Edwards and James, 18, King-street, Cheapside.
SECRETARY—John Russell, Esq.
OFFICES—12, OLD JEWRY CHAMBERS, E.C.

PROSPECTUS.

This company has been formed for the purchase of a freehold estate in the neighbourhood of, and immediately facing, the Finsbury New Park, and also to manufacture bricks from the valuable deposit of plastic clay which covers its surface to a very considerable depth.

The estate, containing about 27 acres, is situated within 200 yards of the Seven Sisters Road station, on the Great Northern Railway, and is in the centre of a large building neighbourhood; it adjoins Highbury New Park on the south-east, and has a considerable frontage to the Seven Sisters-road on the north-west. The old Sluce House Tavern is on the property, and the fields and meadows have been the favourite resort of Londoners for many years past.

It is unnecessary to speak of the enormous and increasing demand which has of late years arisen for bricks, and the great difficulty with which it has been met. It is notorious that all engaged in this manufacture are reaping large fortunes.

This manufacture is not an undertaking in which there is any hidden element to deal with—it has no speculative character; the calculations as to the operations are plain and simple, and the results as to profit easily deduced.

At a rough estimate it may be stated that, supposing it advisable to use the brick earth to a depth of 6 feet only, the estate will produce upwards of two hundred millions (200,000,000) of bricks, which it is calculated will yield a net profit of 15s. per thousand (1000), or for the whole estate £150,000. There is no reason, however, why the brick earth should not be worked to a much greater depth—in fact, the deposit has been proved to a depth of 30 ft., and the number of bricks it would produce, were it considered desirable to continue the workings, is, therefore, almost incalculable. The earth has been thoroughly tested for brick-making, and the results are highly satisfactory.

A large portion of this estate is traversed by the New River. The vendors have agreed with the New River Company to divert the stream, and the valuable piece of elevated land, which now forms the bed of the river—consisting of little else but well-puddled clay—containing as it does the material for many millions of bricks, will belong to this company.

As a building site—surrounded by the charming neighbourhoods of Highbury, Canonbury, Hornsey, and Stoke Newington, and within site of Alexandra Park, and with a splendid frontage to the Finsbury New Park—it is unequalled. The drainage of the estate (a matter of vast importance) is excellent, the high level sewer crossing the property at a depth of 30 ft. from the surface.

When sufficiently worked for brick-making, the estate will let, as laid out, on building leases, and will bring in, at the lowest estimate, £2000 per annum, which, taken for freehold ground rent at 25 years purchase, will yield £75,000. The vendors have agreed to part with the estate to the company for a sum of £300,000, and 1000 shares fully paid-up, together with a royalty of 1s. 3d. for every thousand of bricks manufactured and sold by the company.

The directors are empowered by the Articles to pay interest on the paid-up capital, at the rate of 6 per cent. per annum, until such time as the profits begin to accrue. And all profits exceeding 20 per cent. per annum are to be passed to a reserve fund, to be dealt with as the shareholders shall determine at a general meeting convened for that purpose.

As an investment, the company offers complete security; the property is certain to steadily increase in value, and after dividing the large profits to be made by the bricks, the estate will then be worth, for building purposes, at least £75,000.

Powers to increase the capital have been taken in the Articles of Association, should other eligible estates be met with.

An early application for shares is necessary, as the allotment will be made in strict accordance with priority of application.

Forms of application for shares to be had at the offices of the company, of the bankers, the directors, or the architect and surveyor.

FORM OF APPLICATION FOR SHARES.

To the Directors of the Finsbury Park Freehold Landed Estate and Brick-making Company (Limited).

GENTLEMEN,—Having paid to the Imperial Bank (Limited) the sum of £ , being a deposit of £3 per share upon £10 each in the Finsbury Park Freehold Landed Estate and Brick-making Company (Limited), I request that you will allot me that number; and I hereby agree to accept such shares, or any less number than you may allot to me; and I further agree to pay £3 per share on allotment and the remaining £4 per share within one month of the date of allotment, and to sign the Articles of Association of the said company when called upon so to do.

Name in full
 Profession or occupation (if any)
 Residence in full
 Date Usual signature
 Deposits to be paid to the Imperial Bank (Limited).

MINING OFFICES, MANCHESTER.

THOMAS MOLYNEUX AND CO., MINE AGENTS AND SHAREBROKERS. Reliable information can be obtained as to purchase and sale of shares.
 Offices of the Ellen United Copper and Zinc Mining Company (Limited), and Hazel Grove Silver-Lead Mining Company (Limited). **THOMAS MOLYNEUX, Secretary, 28, Princess-street, Manchester.**

MANCHESTER, AND WEST END OF LONDON.

MR. W. HANNAH, MINING, SLATE QUARRYING, INSURANCE, AND GENERAL SHAREBROKER.
 ROYAL INSURANCE BUILDINGS, KING STREET MANCHESTER; and 10, BENTLEY STREET, LONDON, E.C.
 INSTANTANEOUS COMMUNICATION with the STOCK AND MINING EXCHANGES, avoiding the delay and annoyance of visiting the City to ascertain prices. A Monthly Investment Circular on application.

ROBERT LIBBY AND SON, MINE SHAREDEALERS, &c., CAMBORNE, CORNWALL.

The time is fast approaching when Cornish mining will again resume its position, and we now beg to call the immediate attention of capitalists to buy, as there are many mines just now in the county, if the shares are bought at once, which will soon realise cent. per cent. for their outlay; and being situated in the immediate neighbourhood, we shall be glad to give every information to parties who will favour us with an enquiry.

MINE SPECIALLY RECOMMENDED FOR IMMEDIATE PURCHASE:—
 Cook's Kitchen. South Crofty. New Lovell.
 East Lovell. North Crofty. Wheal Trannack.

MR. GEORGE DARLINGTON, CONSULTING MINING ENGINEER (Graduate of the Royal School of Mines), GROVE PARK, WREXHAM.—Mr. DARLINGTON is OPEN TO ACCEPT ENGAGEMENTS TO REPORT UPON, MODEL, OR ABANDON MINES, OR MINING WORKS, and from his practical and varied experience in all kinds and classes of mines, both abroad and at home, especially on the Continent, in America, and in Australia, he can confidently offer his services to those who may require faithful reports or examinations of mining properties at home or abroad. Mr. DARLINGTON speaks French and German fluently, and is acquainted with the mining laws of those countries.

RED LION HOTEL, TRURO.—An OLD-ESTABLISHED FIRST-CLASS FAMILY, COMMERCIAL, AND POSTING-HOUSE. Very superior accommodation to Families, Tourists, Mining, and Commercial Gentlemen. Ladies' and Gentlemen's Coffee and Private Sitting Rooms. Omnibus to meet every train.
JANE DOBB, Proprietress.

HASKOLL'S FIELD-BOOK FOR ENGINEERS.

Just published, price 12s., strongly bound roan tuck, post free.
THE ENGINEERS' MINING SURVEYOR'S, AND CONTRACTOR'S FIELD-BOOK, FOR EXPEDITING FIELD-WORK OPERATIONS. Being a Series of Tables with Rules and Notes.
 By **W. DAVIS HASKOLL, C.E.**

"Much valuable time will be saved by reference to a set of reliable tables, prepared with the accuracy and fullness of those given in this convenient pocket volume."—*Railway News.*

"The separate tables of sines and tangents to every minute will make it useful for many other purposes, the genuine traverse tables existing all the same."—*Athenaeum.*

"Cannot fail, from its portability and utility, to be extensively patronised by the engineering profession."—*Mining Journal.*

"We know of no better field-book of reference or collection of tables."—*Artisan.*

"A series of tables likely to be very useful."—*Building News.*

London: Lockwood and Co., 7, Stationers' Hall-court, E.C.

Now ready, price 5s., by post 5s. 4d.

THE MINES OF CORNWALL AND DEVON: STATISTICS AND OBSERVATIONS, 1865.
 By **THOMAS SPARGO, Mining Engineer, Stock and Sharebroker,** Grosvenor House, Old Broad-street, London, E.C.

Plates, 8vo., cloth, price 10s. 6d., by post 11s.

THE MINER'S MANUAL OF ARITHMETIC AND SURVEYING.
 By **WILLIAM RICKARD,** Teacher of Practical Mining in the late Mining School of Cornwall, and Principal of the Engineering Academy, 29, Upper Parliament-street, Liverpool.
Truro: Heard and Son, London: Longman and Co.; the office of the Mining Journal, 29, Fleet-street; of the author, and of all booksellers.

In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

IN THE MATTER OF THE COMPANIES ACT, 1862, and of the WEST WHEEL PROSPER MINING COMPANY.—TO BE SOLD, under the direction of the Registrar of the said Court, BY PUBLIC AUCTION, on Monday, the 17th day of September next, at Eleven o'clock in the forenoon, at WHEEL SITHNEY AND CARNMEAL UNITED MINES, in the parish of Sithney, within the said stannaries, either together or in lots, the MINE SETT or GRANT of the said company, and the undermentioned MINING MACHINERY AND MATERIALS, viz:—
 ONE 60 in. cylinder PUMPING ENGINE, with TWO BOILERS 11½ tons each.
 ONE 24 in. STAMPING and WINDING ENGINE, with stamps axle, and 16 heads of stamps, BOILER about 18 tons.
 5 balance-bobs, 2 shears with shives, 3 horse whims with pulleys and stands, 1 poppet head with about 40 fms. stands and pulleys, capstan with 12 in. capstan rope, 1 angle bob, 1 fend-off bob, 1 12 ft. 12 in. plunger pole with 12 in. pole case, stuffing box and gland, 1 9 ft. 12 in. plunger pole. About 180 fms. 3 in. wood flat-rods, with strapping plates, &c.; about 100 fms. 1½ and 1¾ in. flat-rods, with pulleys; about 95 fms. 11 in., 9 in., and 6 in. main rods, 7 fms. 12 in. ditto, with 9 in. connection piece; about 195 fms. iron stave ladders, 2 knockers and lines, several fathoms wood air pipes, several fathoms bucket rods, 2 pairs of yokes, about 180 fms. fire whim chain, crab winch and chain, 2 7-faths horse whim chains, several whims, horse whims and winze kibbles, 1 tram wagon, several cwt. of old brass, and a large and valuable quantity of pumps, ladders, and other materials in general use in mines.
 The plant and machinery on the above mine are of a most valuable description. The materials may be inspected any time prior to the sale, on application to Mr. R.D. OLIVER, in charge thereof.
HODGE, HOCKIN, AND MARRACK, Solicitors, Truro.
 Dated Registrar's Office, Truro, August 30, 1866.

In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

**IN THE MATTER OF THE COMPANIES ACT, 1862, and of the WOODLEY LANE TIN WORKS MINING COMPANY.—TO BE SOLD, under the direction of the Registrar of the said Court, BY PUBLIC AUCTION, on Monday, the 24th day of September inst., at Eleven o'clock in the forenoon, at WOODLEY LANE TIN WORKS MINE, parish of Llanivet, within the said Stannaries, together or in lots, the MINE SETT or GRANT of the said company, and the undermentioned MINING MACHINERY, MATERIALS, AND EFFECTS, viz:—ONE 24 in. STAMPING ENGINE, fly-wheel, and BOILER, complete; stamps, frames, iron and wood lifters and axles, water-wheels (with iron axles), several round bobbles (complete), 240 ft. iron rods for working blocks, blocks, chain, launders and stands, 100 ft. 6 in. iron pipes, large wheel-pulley, 6 tons of coal, bow-stands, 240 ft. iron rods, wagons, shovels, knives, handracks, carpenter's bench and chests, miners' tools, turning lathe, leather, hemp, safety-fuse, brass and half bottom sieves, and tin hatch, with about ¾ cwt. of tin. The pit-work, comprising 1½ mile of double tramroad iron, with oak posts and sleepers; lot of iron wire, old powder-house, &c.; gudgeons, launders, &c. Together with the account-house furniture, and a variety of other effects in general use at mines.
 Further information may be obtained on application to Mr. W. T. TRELEAVEN, the bailiff in charge thereof.
HODGE, HOCKIN, AND MARRACK, Solicitors, Truro.
 Dated Registrar's Office, Truro, Sept. 6, 1866.**

In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

**IN THE MATTER OF THE COMPANIES ACT, 1862, and of the WOODLEY LANE TIN WORKS MINING COMPANY.—By an order made by His Honour the Vice-Warden of the Stannaries in the above matter, dated the 22nd day of August inst., on the petition of Thomas Martyn, of Wadebridge, within the said Stannaries, a creditor of the said company, it was ordered that the WOODLEY LANE TIN WORKS MINING COMPANY should be WOUND-UP by this Court under the provisions of the Companies Act, 1862.
HODGE, HOCKIN, AND MARRACK, Solicitors, Truro.
 Dated Registrar's Office, Truro, August 23d, 1866.**

In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

**PURSUANT to an Order made in the Cause of Down v. Collom, the CREDITORS in respect of CORNWALL GREAT CONSOLS MINE, in the parish of Calstock, within the said Stannaries, are, on or before Tuesday, the 15th day of September inst., to COME IN and PROVE THEIR DEBTS before the Registrar of the said Court, at his office in Truro, or in default thereof they will be precluded from the benefit of the said decree.
J. G. CHILCOTT, Truro
 (Agent for E. Chilcott, Plaintiffs' Solicitor, Tavistock).
 Dated Registrar's Office, Truro, September 3, 1866.**

In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

IN THE MATTER OF THE COMPANIES ACT, 1862, and of the WEST WHEEL PROSPER MINING COMPANY.—TO BE SOLD, under the direction of the Registrar of the said Court, BY PUBLIC AUCTION, on Tuesday, 25th day of September inst., at Eleven o'clock in the forenoon, at the WEST WHEEL PROSPER MINE, in the parish of Llanivet, within the said Stannaries, either together or in lots, the MINE SETT or GRANTS of the said company, and the undermentioned MINING MACHINERY AND MATERIALS, viz:—
 ONE 30 in. ROTARY STAMPING ENGINE, with fly-wheel.
 ONE 10 ton BOILER, 48 heads of stamps erected complete.
 9 fms. 10 in. plunger pumps, 1 bob and main rod, 2 new iron stamps axles to draw 48 heads, 15 lifters and tongues, new dressing-floors, 16 ties from stamps with 2 rollers, water-wheel, several round bobbles complete, launders and stands, 1 large dressing shed, 2 racks, 8 tin dressing knives and bottoms, 1 large tin hatch, long incline plane, with bridge rails and steel sleepers; several cwt. of small iron screws, 500 or 600 fms. of wire-rope, and shives for ditto; cage for leaving down tram wagons, 8 tram wagons, sundry cast-iron heads and tappets, old timber, barrows, miners' and blacksmiths' tools, new ironwork for erecting new stamps, &c., lot of new timber prepared for same, 18 new wagon wheels, new ironwork for tram wagons, about 3 tons of coal, a lot of new and old iron, and other articles, also account-house and office furniture.
HODGE, HOCKIN, AND MARRACK, Solicitors, Truro
 Dated Registrar's Office, Truro, September 8, 1866.

In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

IN RE WHEEL CURTIS MINE.
TO BE SOLD, pursuant to an Order made in a Cause Matthews and Another v. Allen and Others, dated the 27th day of April, 1866, at the Registrar's Office, at Truro, on Wednesday, the 12th day of September, inst., at One o'clock in the afternoon,
 4 (FOURTH) PARTS or SHARES of the defendant Joseph Elliot Square Of and in the said MINE. **CARLYON and PAUL, Truro**
 (Agents for W. Yewens, Plaintiffs' Solicitor, Camborne).
 Dated Registrar's Office, Truro, Sept. 5, 1866.

HIGHLY IMPORTANT SALE OF MINING MACHINERY AT THE WHITE GRIT AND STAPLEY MINE, COUNTY OF SALOP.
 Five miles from Bishop's Castle, and six miles from the Minsterley Branch on the Welshpool and Shrewsbury Railway.

MR. W. BOUSTRED has been honoured with instructions to SELL, BY AUCTION, without reserve, on Tuesday and Wednesday, 11th and 12th September, 1866, the whole of the VALUABLE PLANT and MACHINERY on the above mines, comprising:—
 50 inch cylinder CORNISH CONDENSING ENGINE, equal to new; 40 inch cylinder ROTARY ENGINE, capable of being worked up to great power, in excellent condition; and a capital 20 inch cylinder ENGINE, in good working order; 7 BOILERS, from 21 ft. long, 4 ft. diameter, to 37 ft. long, 6 ft. 4 in. diameter, the whole of them in good working order, having been only recently fixed; 320 fms. of plunging and drawing lifts, averaging from 5 to 16 in. bore, of various lengths, with working barrels, wind bores, 11 and door piece complete; 200 fms. of red deal and iron rods; strapping plates and bolts; 7 superior plunger poles, comprising 8 in., 9 in., two 11 in., 14 in., and two 16 in., all in excellent condition; duplex punching machine, 2 new capstans, 4 horse whims, cold hammered iron shafts and cranks, pulley wheels, 21 and travelling bobs; lifting screw, 14 ft. long, 3 in. diameter; 150 fms. pit ladders, 30 tons of cast and wrought iron rails, iron saddles, 2 tons of cast steel bobbles, 1 fms. of boring tools, large quantity of new and old iron, old lead, old brass, miners' and smiths' tools, anvils, vices, 4 pairs of bellows, 3 whim ropes, 4 capstan ropes, 1000 fms. of B.B. crane chain, 3 winches, double and single blocks, new nails, bolters rivets, screw stocks and dies, oil, candles, grease, safety fuse, powder, and a large quantity of other effects, described in catalogues to be had, 10 days previous to sale, of Captain LITTLEJOHN, on the mines; the office of the *Middleland Counties Herald*, Birmingham; *Chronicle* office, Shrewsbury; or of the Auctioneers, Pontesbury.
 Sale to commence each day at Eleven for Twelve o'clock punctually.

ABSOLUTE SALE.—TO CAPITALISTS, COLLIERY PROPRIETORS, &c.

MR. JOHN M. LEEDER is instructed by the mortgagee in possession to OFFER FOR SALE, BY PUBLIC AUCTION (subject to such conditions as shall then and there be produced) on Tuesday, Sept. 18, 1866, at the Mackworth Arms Hotel, Swansea, the VALUABLE COLLIERY and COAL FIELDS, containing 300 acres or thereabouts, known as the KILLAN COLLIERY and COAL FIELDS, situated in the Duntavally Valley.

The property contains 10 seams of highly bituminous coal, fit for house, gas, and smith's purposes. The colliery is now opened on three of the seams, and capable of a large daily output. A branch and siding, together with necessary tips, and connection with the Duntavally Valley Railway, being complete. The colliery is well provided with steam-power and pumping apparatus, in excellent working order, with all necessary trams, rails, and other plant for working a large quantity of coal.

The above offers a rare opportunity for a safe investment; the transit of the coal to the ports of Swansea and Llanelli (for which there is a ready sale) being very easy by narrow-gauge railway.

Sale to commence at Three o'clock in the afternoon.
 Two detailed reports have been made by Joshua Richardson, Esq., and David Llewellyn, Esq., showing the extent and prospective value of the colliery, which can be perused on application.
 For further particulars apply to **RICHARD JESKINS, Esq., Solicitor, Goat-street, Swansea**, or to the Auctioneer, at his offices, Commercial Sale Rooms, 16, Caer-street, Swansea.

EAST WHEEL GRYLLS MINE—MACHINERY, PITWORK, &c., FOR SALE.—TO BE SOLD, all the excellent MACHINERY, PITWORK, and MATERIALS in and upon the Mine, as they now stand, in one lot, TENDERS for the same will be RECEIVED up to WEDNESDAY, 12th September, by Mr. W. WATSON, 27, Atheneum-street, Plymouth. For viewing the same apply to Capt. ROGERS, on the Mine, near Marazion, Cornwall.

WHEEL GRYLLS MINE—MACHINERY, PITWORK, &c., FOR SALE.—TO BE SOLD, all the excellent MACHINERY, PITWORK, and MATERIALS in and upon the Mine, as they now stand, in one lot, TENDERS for the same will be RECEIVED up to WEDNESDAY, 12th September, by Mr. W. WATSON, 27, Atheneum-street, Plymouth; or Mr. J. H. MURCHISON, 8, Austinfriars, London. For viewing the same apply to Capt. ROGERS, on the Mine, near Marazion, Cornwall.

GREAT WHEEL GRYLLS MINE—MACHINERY, PITWORK, &c., FOR SALE.—TO BE SOLD, all the excellent MACHINERY, PITWORK, and MATERIALS in and upon the Mine, as they now stand, in one lot, TENDERS for the same will be RECEIVED up to WEDNESDAY, 12th September, by Mr. W. WATSON, 27, Atheneum-street, Plymouth; or Mr. J. H. MURCHISON, 8, Austinfriars, London. For viewing the same apply to Capt. ROGERS, on the Mine, near Marazion, Cornwall.

EAST WHEEL VOR MINES—MACHINERY, PITWORK, &c., FOR SALE.—TO BE SOLD, all the excellent MACHINERY, PITWORK, and MATERIALS in and upon the Mines, as they now stand, in one lot, TENDERS for the same will be RECEIVED up to WEDNESDAY, 12th September, by Mr. W. WATSON, 27, Atheneum-street, Plymouth; or Mr. J. H. MURCHISON, 8, Austinfriars, London. For viewing the same apply to Capt. POLLARD, on the Mines, near Helston, Cornwall.

CWM RHAYADR MINE LEASE AND PLANT TO BE DISPOSED OF.—Immediate possession can be given. There are several lead ore veins traversing the estate. Further particulars can be obtained, and to treat, to "H. D.," Post-office, Llanabon, North Wales.

VALUABLE MINERAL PROPERTY, known as ESTEDDFOD, in the parish of MINERA, in the county of DENBIGH.—TO BE SOLD, BY PRIVATE CONTRACT, an UNDIVIDED MOIETY in the above valuable PROPERTY, MINES, and MINERALS, called or known as ESTEDDFOD, containing a surface area of 152 acres, or thereabouts. The property contains very valuable deposits of carboniferous limestone, which is extensively used as a flux in the reduction of iron ore, as well as for agricultural purposes. It also abounds in rich lead and associated minerals, as the main lodes proved so extensively in the great Minera Mines (which adjoin the property on the south) pass through the Estdedfod Estate. Coal for engine and other purposes is raised in the immediate district. Railway accommodation is also convenient, as the Minera branch of the Great Western Railway extends into the estate, and affords perfect facilities for transit. A very careful examination of the property, with reference to the minerals, has been made by a practical mining engineer, whose report may be inspected. With good management, and under a careful inspection, this will become one of the most valuable properties in the district. For further particulars, apply to HENRY BECKETT, Esq., E.G.S., Mining Engineer, Wolverhampton; or to ROBERT SOLE LANGWOOD, Esq., Solicitor, No. 2, Promenade-place, Clarence-street, Cheltenham.

LEAD MINE.—FOR SALE, BY PRIVATE CONTRACT, the LEASE, PLANT, and MACHINERY of TEES SIDE MINE, near ALSTON, CUMBERLAND. This sett is very extensive, and is traversed by several powerful veins; from one of them 1000 tons of lead ore has been raised from a shaft 20 fms. deep, and on a length of ground about 60 fms. in extent, at 1-7th dies. The lodes are now 1-20th. Lodgings for miners, workshops, stabling, &c., are all in order for immediate operations. The agent on the mine will show the property; and for other particulars apply to Messrs. HOYLE, SHURLEY, and HOYLE, Solicitors, Newcastle-on-Tyne; or Messrs. HILL and HOYLE, No. 121, Cannon-street, London.

STEAM ENGINES FOR SALE:—60-inch PUMPING ENGINE equal beam, 10 ft. stroke, with TWO 10-ton BOILERS; 36-in. CYLINDER SINGLE-ACTING ROTARY ENGINE, 14 ton fly-wheel, with 9 ton BOILER; 18-inch CYLINDER DOUBLE-ACTING ROTARY ENGINE, with drawing gear, 7 ton BOILER, and 7-ton BOILER, the whole in good condition, to be seen at Kelly Bray Mine, Callington, Cornwall.—For further particulars and price, apply to Mr. EDWARD KING, 22A, Austinfriars, London.

FOR SALE.—A SECOND-HAND PORTABLE OR TRACTION STEAM ENGINE, of 7-horse power; has reversing gear; with or without pit winding drum.—Apply to BARROWS and CARMICHAEL, Portable Engine Works, Banbury, Oxon.

PORTABLE STEAM-ENGINES (SECOND-HAND) FOR SALE.—TWO 20-horse, by ROBEY, of Lincoln; TWO 10-horse, by CLATTON, SHUTTLEWORTH, and Co.; and a 6-horse; also a 10-horse RETURN FLUE ENGINE; and also FOUR OTHER ENGINES, out of repair, which will be disposed of at a moderate price.—For particulars, apply to MEAD and Co., No. 2, King's Bench-walk, Temple, E.C.

GREAT DISCOVERY IN BORING AND BLASTING, AT THE DEVON GREAT CONSOLS COPPER MINES.
MR. ABEIG is NOW CONDUCTING THE TRIAL OF PATENTED BORING AND BLASTING MACHINES. Up to the present time the trial has proved most satisfactory. In kellas, intermixed with veins of quartz, the boring machine bores holes of 2½ in. diameter, 3 ft. deep in good quarters of an hour, by one man. The holes are blasted with electricity. The charge of powder is mixed with sawdust, three-quarters of the latter to one-quarter of the former; the saving of the powder is thereby three-fourths. The quantity of powder used is the same as for a small hole, but from the size of such a large hole the effect of breaking is three or four times more at one blast.
 Any further particulars as to the price of the machine, &c., may be obtained by application to Mr. RICHARDS, Crosby House, 95, Bishopsgate-street, London; or to Mr. ABEIG, at Devon Great Consols Mine, where the machines will be used in the 130 cross-cut during the next fortnight.

VULCANISED INDIA-RUBBER, FOR ENGINEERS AND MECHANICAL PURPOSES.
 VALVES—for Marine and Land Engines' Steam Packing, sheet or roll. DELIVERY AND SUCTION HOSE—for Brewers, Distillers, Fire-engines, Gardens, &c.
 MACHINE BANDS—for all descriptions of Machinery.
 GAS TUBING—with or without wire.
 GAUGE GLASS RINGS.—Price Lists free on application.

SOUTHWARK INDIA-RUBBER COMPANY (LIMITED), 67, GRANGE ROAD, BIRMINGHAM, LONDON, S.E.

WILLIAMS'S PERRAN FOUNDRY COMPANY, PERRANARWORTHAL, CORNWALL.
 MANUFACTURERS OF STEAM PUMPING AND EVERY OTHER KIND OF ENGINES, together with BOILERS, PUMP CASTINGS, and MINING TOOLS of every description, of the very best quality. Estimates given for the supply of any amount of machinery.
 London Agent.—Mr. EDWARD COOKE, 2, Crown Chambers, Threadneedle-street.

Swan Rope Works.

GARNOCK, BIBBY, AND CO., CHAPEL STREET, LIVERPOOL.
 MANUFACTURERS OF FLAT and ROUND HEMP and IRON and STEEL WIRE ROPES for MINING, RAILWAY, and SHIPPING PURPOSES.
 MANILLA ROPE of SUPERIOR QUALITY, FIFTY PER CENT. STRONGER and THIRTY PER CENT. CHEAPER than Russian hemp rope.
 WIRE ROPE of FIRST QUALITY WIRE, and the HIGHEST STANDARD OF STRENGTH.

NOTICE.—CAPT. S. M. RIDGE, of LLANIDLOES, MONTGOMERYSHIRE (late manager of the Brynpatig and Cwm Ffion Mines, and others, in Shropshire and Wales), is NOW OPEN to INSPECT and faithfully REPORT UPON ANY LEAD MINE in either of these localities that may be confided to his care, having had better than 30 years' experience in lead mining, as miner and agent.—Address, Capt. S. M. RIDGE, Llanidloes, Montgomeryshire.

CAPT. JOHN ROBERTS, who has just returned from Brazil, and who has spent eighteen years in gold mining in Brazil, New Granada, &c., now OFFERS himself to INSPECT any MINES in or out of Great Britain. Capt. Roberts would have no objection to a permanent situation.—Address, Heol, Schull, co. Cork, Ireland.

CAPT. J. RABEY OFFERS FOR SALE FIFTY SHARES, at the net price of £3 per share, in the CAL-R-PANT MINE, joining the great Minera Mine, and one of the best prospects in the district, being all whole ground, and the mine paying for itself now at the shallow depth of 40 yards.—Address, Capt. J. Rabey, Coedporth, near Wrexham, Denbighshire, North Wales.

CAPT. RICH. BODMIN, CORNWALL, being in the centre of the mining districts of Devon and Cornwall, and having had 25 years' experience in the management and inspection of mines, OFFERS HIS SERVICES to INSPECT and REPORT on MINES in either of the above counties. Orders promptly attended to.

RAILWAYS AND MINES.—Capitalists who seek safe and profitable investments, free from risk, should act only upon the soundest information. The market prices for the day are for the most part governed by the immediate supply and demand, and the operations of speculators, without reference to the bona fide merits of the property. Railways depend upon the competition with neighbouring companies, the probabilities of alliance or contract, expenditure, and capital accounts. The state of the Money Market as affecting the renewal of debentures, and other considerations founded on data to which those only can have access who give special attention to the subject. Mines afford a wider range of profit than any other public securities. The best are free from debt, have large reserves, and pay frequently bi-monthly varying from £10 to £15 per cent. per annum. Instances of successful young mines rising in value 400 or 500 per cent. are more than any other, should be purchased with special attention to Railways and Mines, formation. The undersigned devote special attention to Railways and Mines, affording every information to capitalists, and effect purchases and sales upon the best possible terms. Thirty years' experience in mining pursuits justifies us in offering our advice to the uninitiated in selecting mines for investment.

MESSRS. TREDINNICK AND CO., ST. MICHAEL'S HOUSE, CORNHILL, LONDON.

NICHOLLS, MATHEWS, AND CO., ENGINEERS,
BEDFORD IRONWORKS, TAVISTOCK.
MANUFACTURERS OF STEAM ENGINES OF EVERY DESCRIPTION, made
on the BEST AND NEWEST PRINCIPLES. We beg more especially to call the
attention of the public to the MANUFACTURE OF OUR BOILERS, which have
been tested by most of our leading engineers. PUMP WORK CASTINGS OF
EVERY DESCRIPTION, both of brass and iron. HAMMERED IRON and
HEAVY SHAPES OF ANY SIZE. CHAINS made of the best iron, and war-
ranted MINERS' TOOLS and RAILWAY WORK OF EVERY DESCRIPTION.
ALL ORDERS FOR ABOVE RECEIVED THEIR BEST ATTENTION.
NICHOLLS, MATHEWS, AND CO. have had 20 years' experience in supplying ma-
chinery to foreign mines, and selecting experienced workmen to erect the same,
where required.
Messrs. NICHOLLS, MATHEWS, AND CO. have always a LARGE STOCK of
SECOND-HAND MINE MATERIALS in stock, and at moderate prices.

PATENT FLEXIBLE TUBING,
AND BRATTLE CLOTH FOR MINES,
MANUFACTURED BY
ELLIS LEVER,
PATENTEE,
WEST GORTON WORKS, MANCHESTER.

TAVISTOCK IRONWORKS AND STEEL ORDNANCE
COMPANY (LIMITED).
(LATE GILL AND CO.)
ENGINEERS, IRON AND BRASS FOUNDERS,
MANUFACTURERS OF
STEAM ENGINES, BOILERS, AND MACHINERY OF ALL KINDS.
CHAINS, SHOVELS, EDGE TOOLS, AND EVERY DESCRIPTION OF CAST
AND HAMMERED IRON FOR MINING, MANUFACTURING,
RAILWAY, OR AGRICULTURAL PURPOSES.
Machinery sent to all parts of the world.
Foreign mining companies supplied on liberal terms.

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ESTABLISHED 1847.
OLDBURY WORKS, NEAR BIRMINGHAM.
MANUFACTURERS OF RAILWAY CARRIAGES AND WAGONS, AND EVERY
DESCRIPTION OF IRONWORK.
Passenger carriages and wagons built, either for cash or for payment
over a period of years.
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CHIEF OFFICES, OLDBURY WORKS, NEAR BIRMINGHAM.
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Successors to Messrs. JOSEPH WRIGHT AND SONS.
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IRONWORK OF every description.
RAILWAY CARRIAGES AND WAGONS built for CASH, or upon DEFERRED
PAYMENTS EXTENDING over a period of from THREE to TEN YEARS.
A large number of COAL, IRONSTONE, BALLAST, and OTHER WAGONS to
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MANUFACTURERS OF RAILWAY CARRIAGES AND WAGONS, WROUGHT
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IRON FOUNDERS. MAKERS OF PORTABLE FARM RAILWAYS, TURN-
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MANUFACTURERS OF FIELD, ROAD, AND BARN IMPLEMENTS, PATENT
LOBBY, CART, AND CARRIAGE WHEELS, WITH WOOD OR IRON NAVES.
REAPING MACHINES, CLOD CRUSHERS, CORN MILLS, &c. SAW MILL
PROPRIETORS. GENERAL TIMBER CONVERTERS for home and foreign
RAILWAYS, STATIONS, BARRACKS, EXHIBITIONS, &c.
IRONWORKS BEVERLEY, YORKSHIRE.
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MANUFACTURE RAILWAY WAGONS OF EVERY DESCRIPTION, for
HIRE AND SALE, by immediate or deferred payments. They have also wagons
for hire capable of carrying 6, 8, and 10 tons, part of which are constructed espe-
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WAGON WORKS—SMETHWICK, BIRMINGHAM.
Loans received on Debenture; particulars on application.
London Agent—Mr. E. B. SAVILE, 67, Victoria-street, Westminster, S.W.

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MANUFACTURERS OF RAILWAY CARRIAGE, WAGON, AND CONTRAC-
TORS' WHEELS AND AXLES, AND OTHER IRONWORK, used in the CON-
STRUCTION OF RAILWAY ROLLING STOCK.
CHIEF OFFICES,
3 and 4, EXCHANGE BUILDINGS, BIRMINGHAM.

COAL CUTTING MACHINERY.
THE WEST ARDSLEY COMPANY having, by recently patented improve-
ments, perfected their coal cutting machinery, worked by compressed air, are
NOW READY TO MAKE CONTRACTS FOR THE CONSTRUCTION AND USE OF
their MACHINES.
The results of twelve months' experience in the working of these machines, by
the West Ardsley Company, have proved most satisfactory, their use being found to
CHEAPEN THE COST AND IMPROVE THE AVERAGE SIZE OF THE COAL, TO
LIGHTEN THE LABOUR, and also to MODIFY THE SANITARY CONDITION
OF THE MINE.
All communications to be made to Messrs. FIRTH, DONNISTHORPE, and BOWER,
No. 5, Britannia-street, Leeds.

NOTICE.—THE WEST ARDSLEY COMPANY, having reason
to believe that their patents are being infringed upon, hereby give notice
that they will TAKE LEGAL PROCEEDINGS AGAINST ALL PARTIES
who may MAKE FOR SALE, OR USE ANY MACHINERY in the construction
of which any such INFRINGEMENT IS MADE.

IMPROVED APPLICATION OF WATER-POWER.
THE TURBINE.—MAC ADAM BROTHERS AND CO.,
ENGINEERS, SOHO FOUNDRY, BELFAST, have been engaged for
fifty years, with complete success, in MANUFACTURING their IMPROVED
TURBINES, and can recommend them with confidence.
This machine is applicable to all practicable heights of fall and quantities of
water, giving a much higher percentage of power than any other description of
water-wheels.
On low falls it has the additional advantage of not being affected by floods or
water, and is particularly well adapted for any falls where the quantity
of water is variable.
Further particulars on application, also references to turbines now at work
on a great variety of falls.

CHARLES DAVEY AND CO.,
SAFETY FUSE MANUFACTURERS,
ST. HELEN'S JUNCTION, LANCASHIRE

BASTIER'S CHAIN PUMP.
This patent pump is the MOST EFFICIENT in existence for LIFTING
ANY QUANTITY OF WATER FROM ANY DEPTH. One lifting from a depth
of 170 ft. may be seen at work daily, on application to the
SOLE LICENSEES,
MESSRS. J. JACKSON AND CO., ENGINEERS, 17, GRACECHURCH
STREET, LONDON, E.C.
Who SUPPLY PUMPS AND LICENCES.
Communications to Mr. Bastier, the patentee, to be sent to the same address.

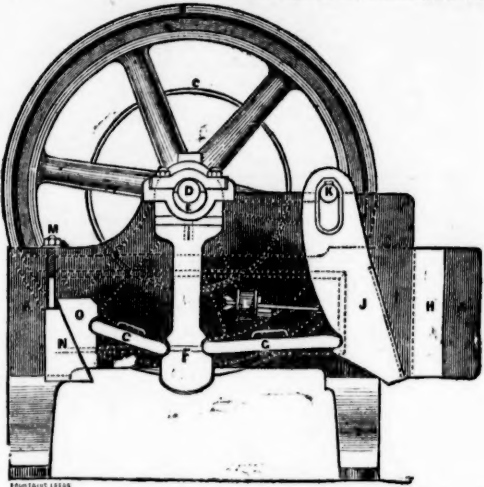
AGENT FOR THE COUNTIES OF NORTHUMBERLAND AND DURHAM, YORKSHIRE,
BERKSHIRE, AND NORTH STAFFORDSHIRE,
MR. THOMAS GREEN, MINING OFFICE, NORTHGATE,
DARLINGTON.

£250,000 HAVE BEEN PAID AS COMPENSATION
FOR ACCIDENTS OF ALL KINDS BY THE
RAILWAY PASSENGERS' ASSURANCE COMPANY.
Invested capital and reserve fund, £250,000.
Annual Income, £85,000.
An Annual Payment of £3 to £6 is secured £1000 in case of Death, or £6 per
week while laid up by Injury.
For particulars apply to the Local Agents, at the Railway Stations, and
OFFICES,—64, CORNHILL, and 10, REGENT STREET.
W. J. VIAN, Sec.

SALOM'S NEW OPERA AND FIELD GLASS, and the
"RECONNOITERER" GLASS, price 10s. 10d., sent free.—This TOURIST'S
FAVOURITE, through extraordinary division of labour, distinctly shows small
windows 10 miles off, landscapes at 30 miles, Jupiter's moons, &c.—The MARQUIS
OF CARMARTHEN: "The reconnoiterer is very good."—The EARL OF BREADAL-
MARE: "I find it all you say, and wonderfully powerful for so very small a glass."—
—EARL OF CAITHNESS: "It is a beautiful glass."—Rev. Lord SCARSDALE ap-
proves of it.—Lord GIFFORD, of Ampley: "Most useful."—Lord GAYAGH:
"Remarkably good."—Sir DIGNY CAVLEY, of Brompton: "It gives me complete
satisfaction, and is wonderfully good."—Sir W. H. PIERCE: "I do not think
it can be surpassed; it gives great satisfaction."—Capt. SENDEY, Royal Small
Arms Factory, Enfield, "found it effective at 1000 yards range."—F. H. FAWKES,
of Farnley Hall, Esq.: "I never before, although I have tried many, met a glass
combining so much power for its size with so much clearness."—The Field: "We
have carefully tried it at 300-yard rifle range, and found it fully equal to any of
those present, although they had cost more than four times its price."—Notes
and Queries: "What intending tourist will now start without such an indispen-
sable companion?" The celebrated HYTHE GLASS shows bullet-marks at
1200 yards, and men at 3½ miles; price, 31s. 6d. All the above, respectively
bearing the registered trade marks, "Salom," "Reconnoiterer," and "Hythe,"
are only to be had direct from SALOM AND CO., 98, PRINCESS-STREET, EDINBURGH,
and 127, REGENT-STREET, LONDON, W.
A few hours will carry a glass to almost the remotest town in the United
Kingdom.
No agents of any kind anywhere.

IMMENSE SAVING OF LABOUR. TO MINERS, IRONMASTERS, MANUFACTURING CHEMISTS, RAILWAY COMPANIES, EMERY AND FLINT GRINDERS, MCADAM ROAD MAKERS, &c., &c. **BLAKE'S PATENT STONE BREAKER,** OR ORE CRUSHING MACHINE,

FOR REDUCING TO SMALL FRAGMENTS ROCKS, ORES, AND MINERALS OF EVERY KIND.
It is rapidly making its way to all parts of the globe, being now in profitable use in California, Washoe, Lake Superior, Australia, Cuba, Chili, Brazil, and
throughout the United States and England. Read extracts of testimonials:—



The Parys Mines Company, Parys Mines, near Bangor, June 6.—We have had
one of your stone breakers in use during the last twelve months, and Captain
Moreton reports most favourably as to its capabilities of crushing the materials
to the required size, and its great economy in doing away with manual labour.
For the Parys Mining Company,
JAMES WILLIAMS.

H. R. Marsden, Esq.

Emery Works, Manchester.—We have used Blake's patent stone breaker
made by you, for the last 12 months, crushing emery, &c., and it has given every
satisfaction. Some time after starting the machine a piece of the moveable jaw,
about 20 lbs. weight, chilled cast-iron, broke off, and was crushed in the jaws of
the machine to the size fixed for crushing the emery.
H. R. Marsden, Esq. THOS. GOLDSWORTHY & SONS.

Welsh Gold Mining Company, Dolgelly.—The stone breaker does its work ad-
mirably, crushing the hardest stones and quartz.
WILLIAM HUNT.

*Our 15 by 7 in. machine has broken 4 tons of hard whinstone in 20 minutes,
for fine road metal, free from dust.* Messrs. ORP and MADDISON,
Stone and Lime Merchants, Darlington.

Kirkless Hall, near Wigan.—Each of my machines breaks from 100 to 120 tons
of limestone or ore per day (10 hours), at a saving of 4d. per ton.
JOHN LANCESTER.

Oveca, Ireland.—My crusher does its work most satisfactorily. It will break
10 tons of the hardest copper ore stone per hour.
WM. G. ROBERTS.

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of the labour of about 30 men, or \$75 per day. The high estimation in which
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BRITISH DIVIDEND MINES.

| Shares. | Mines. | Paid. | Last Pr. | Business. | Total divs. | Per share. | Last paid. |
|---------|-----------------------------------|----------|----------|-----------|--------------|------------|-------------|
| 15000 | Alderley Edge, c. Cheshire | 10 0 0 | — | — | 8 7 8 | 0 10 0 | Aug. 1886 |
| 15000 | Bellfield, c. Flint | 91 5 0 | 300 | — | 488 15 0 | 5 0 0 | May, 1886 |
| 20000 | British Salt Company | 9 0 0 | — | — | 9 0 0 | — | Sept. 1886 |
| 1000 | Brondy, c. Cardigan | 12 0 0 | — | — | 9 0 0 | — | Aug. 1886 |
| 4000 | Cashwell, c. Cumberland | 2 10 0 | — | — | 6 1 8 | 0 16 0 | Aug. 1886 |
| 916 | Cargill, s. Newlyn | 15 5 7 | 12 | 10 18 | 13 15 0 | 1 0 0 | Feb. 1886 |
| 867 | Cwm Eirin, c. Cardiganshire | 7 10 0 | — | — | 20 18 0 | 1 0 0 | July, 1886 |
| 128 | Cwmystwith, c. Cardiganshire | 60 0 0 | — | — | 332 10 0 | 5 0 0 | April, 1886 |
| 280 | Dorwent Mines, c. Durham | 300 0 0 | — | — | 162 0 0 | 2 10 0 | Mar. 1886 |
| 1024 | Devon Gr. Consols, c. Tavistock | 1 0 0 | 450 | — | 1030 0 0 | 6 0 0 | Aug. 1886 |
| 358 | Dolcoath, c. Camborne | 128 17 6 | — | — | 814 10 0 | 1 0 0 | July, 1886 |
| 4144 | East Caradon, c. St. Cleer | 2 14 6 | 9 | — | 14 5 6 | 0 2 6 | July, 1886 |
| 300 | East Darren, c. Cardiganshire | 32 0 0 | — | — | 118 10 0 | 2 0 0 | May, 1886 |
| 128 | East Pool, c. Pool, Illogan | 24 5 0 | — | — | 379 10 0 | 5 0 0 | July, 1886 |
| 5000 | East Rosewarne, c. L. Gwinnar | 2 15 0 | — | — | 0 10 0 | 0 1 6 | Jan. 1886 |
| 1396 | East Wheal Lovell, c. Wendron | 3 9 0 | 11 | 10 1/2 | 2 7 6 | 0 7 6 | Mar. 1886 |
| 2800 | Foxdale, c. Isle of Man | 25 0 0 | — | — | 68 10 0 | 1 0 0 | June, 1886 |
| 2600 | Frank Mills, c. Christow | 3 18 6 | — | — | 2 4 6 | 0 1 0 | Feb. 1886 |
| 25000 | Gt. Laxey, c. Isle of Man | 4 0 0 | 20 1/2 | 19 20 | 4 15 0 | 0 10 0 | June, 1886 |
| 5000 | Great Wheal Vor, c. Helston | 40 0 0 | 26 1/2 | 25 26 | 10 0 0 | 0 10 0 | June, 1886 |
| 1000 | Herodfoot, c. Near Liskeard | 8 10 0 | 35 | 32 34 | 8 10 0 | 1 10 0 | June, 1886 |
| 9400 | Hingston Down, c. Farnham | 5 10 6 | — | — | 0 10 0 | 0 5 0 | April, 1886 |
| 400 | Lisburne, c. Cardiganshire, Wales | 18 15 0 | — | — | 470 0 0 | 3 0 0 | May, 1886 |
| 2000 | Marke Valley, c. St. Cleer | 4 1 6 | 4 1/2 | 4 1/2 | 0 13 0 | 0 2 0 | July, 1886 |
| 3000 | Minera Boundary, c. Wrexham | 1 0 0 | — | — | 202 8 0 | 3 0 0 | Mar. 1886 |
| 1800 | Minera Mining Co., c. Wrexham | 25 0 0 | — | — | 0 6 6 | 0 2 6 | Mar. 1886 |
| 40000 | Myndy Iron Ore | 3 5 0 | — | — | 10 per cent. | — | May, 1886 |
| 6000 | Pant-y-Glen, s. Llanfyllter | 20 0 0 | — | — | 157 0 0 | 5 0 0 | Jan. 1886 |
| 200 | Parys Mines, c. Anglesey | 50 0 0 | — | — | 81 7 6 | 0 10 0 | Aug. 1886 |
| 1120 | Providence, c. Uxley Lelant | 10 6 7 | 25 | 25 30 | 529 10 0 | 9 0 0 | July, 1886 |
| 120 | South Dartmoor, c. St. Cleer | 1 5 0 | — | — | 10 0 0 | 5 6 0 | June, 1886 |
| 6000 | South Dartmoor, c. St. Cleer | 3 6 6 | — | — | 13 7 6 | 0 10 0 | Aug. 1886 |
| 6000 | Tincroft, c. L. Pool, Illogan | 9 0 0 | 9 1/2 | 11 1/2 | 459 4 0 | 3 0 0 | Aug. 1886 |
| 2000 | W. Chiverton, c. Perranzabuloe | — | 6 1/2 | 6 1/2 | 621 0 0 | 1 0 0 | Mar. 1886 |
| 400 | West Wheal Seton, c. Camborne | 47 10 0 | 140 | 137 1/2 | 300 0 0 | 1 0 0 | Mar. 1886 |
| 512 | Wheal Bassett, c. Illogan | 5 2 6 | 90 | 82 1/2 | 2 19 0 | 0 1 6 | May, 1886 |
| 1024 | Wheal Friendship, c. Devon | 20 0 0 | — | — | 300 0 0 | 1 0 0 | Mar. 1886 |
| 428 | Wheal Killy, c. St. Agnes | 5 4 6 | — | — | 2 19 0 | 0 1 6 | May, 1886 |
| 2000 | Wheal Rose, c. St. Agnes | — | 8 | 13 1/2 | 1 0 0 | 0 10 0 | Feb. 1886 |
| 396 | Wheal Seton, c. Camborne | 58 10 0 | 160 | 170 1/2 | 226 15 0 | 0 8 0 | April, 1886 |
| 1040 | Wheal Trevelyan, s. Liskeard | 3 17 0 | 11 | 9 11 | 54 0 0 | 0 8 0 | June, 1886 |

BRITISH MINES WITH DIVIDENDS IN ABEYANCE.

| Shares. | Mines. | Paid. | Last Pr. | Business. | Total divs. | Per share. | Last paid. |
|---------|-----------------------------------|---------|----------|-----------|-------------|------------|------------|
| 1055 | Cradock Moor, c. St. Cleer | 10 11 0 | — | — | 7 12 0 | 0 4 0 | June, 1885 |
| 1200 | Rydydd, c. Mold | 9 0 0 | — | — | 3 5 6 | 0 13 6 | Aug. 1885 |
| 2880 | Clifford Amalgamated, c. Gwyn | 31 0 0 | 12 1/2 | 13 14 | 35 6 0 | 0 10 0 | June, 1885 |
| 4000 | East Carn Brea, c. Redruth | 3 15 0 | — | — | 0 5 0 | 0 5 0 | June, 1885 |
| 25000 | Minera Co. of Ireland, c. L. Pool | 7 0 0 | — | — | 19 18 11 | 0 16 1 | July, 1885 |
| 8000 | New Wheal Tor, c. Vanner Cons. | 1 6 6 | — | — | 0 13 0 | 0 2 0 | Oct. 1885 |
| 6000 | West Basset, c. Illogan | 1 10 0 | — | — | 26 14 0 | 0 5 0 | July, 1885 |
| 1024 | Wheal Killy, c. St. Agnes | — | — | — | 59 17 6 | 0 10 0 | Mar. 1885 |
| 1024 | Wheal Mary Ann, c. Menheniot | 8 0 0 | 7 | 5 1/2 | 15 11 0 | 0 11 0 | Nov. 1885 |
| 7000 | Wicklow, c. Wicklow | 2 10 0 | — | — | 15 11 0 | 0 11 0 | Nov. 1885 |

FOREIGN DIVIDEND MINES.

| Shares. | Mines. | Paid. | Last Pr. | Business. | Total divs. | Per share. | Last paid. |
|---------|--|--------|----------|-----------|-----------------|------------|-------------|
| 15000 | Cape Copper Mining | 7 0 0 | 10 1/2 | 10 1/2 | 2 12 6 | 0 10 0 | April, 1886 |
| 15000 | East Indian Coal, Calcutta | 10 0 0 | — | — | 1 3 4 | 0 3 0 | Feb. 1886 |
| 25000 | Fortuna, c. Spain | 2 0 0 | 2 1/2 | 2 1/2 | 7 1/2 per cent. | — | per annum. |
| 10000 | Gonnessa, c. Spain | 3 0 0 | 2 | 2 | 11 6 4 | 0 5 0 | Jan. 1885 |
| 15000 | New Wheal Tor, c. Vanner Cons. | 3 0 0 | — | — | 0 12 0 | 0 2 0 | Oct. 1885 |
| 50000 | Panullete, c. L. Pool | 3 0 0 | 3 | 3 1/2 | 2 19 8 | 0 16 8 | Sept. 1885 |
| 10000 | Pontbriand, c. L. Pool | 20 0 0 | — | — | 0 15 6 | 0 10 0 | July, 1885 |
| 97500 | Port Phillip, c. Clunet | 1 0 0 | 7 1/2 | 7 1/2 | 0 0 3 | 0 3 0 | Jan. 1886 |
| 20000 | Scottish Australian Mining Co. | 1 0 0 | — | — | 68 15 0 | 4 0 0 | June, 1886 |
| 11000 | St. John del Rey, Brazil | 15 0 0 | 49 | 48 50 | 0 9 0 | 0 1 0 | Jan. 1886 |
| 50000 | Victoria (London) [25000 £1 pd., 25000 12s. 6d. pd.] | 1 0 0 | — | — | 0 9 0 | 0 2 6 | May, 1886 |
| 40000 | West Canada Mining Company | 1 0 0 | — | — | 0 9 0 | 0 2 6 | May, 1886 |

FOREIGN MINES WITH DIVIDENDS IN ABEYANCE.

| Shares. | Mines. | Paid. | Last Pr. | Business. | Total divs. | Per share. | Last paid. |
|---------|---------------------------------|--------|----------|-----------|-------------|------------|------------|
| 16000 | Alten and Quanaugen United, c. | 4 10 0 | — | — | 4 5 0 | 0 15 0 | Nov. 1885 |
| 20000 | Australian, c. South Australia | 7 7 6 | — | — | 0 2 0 | 0 10 0 | June, 1885 |
| 244 | Burra, c. South Australia | 5 0 0 | — | — | 325 0 0 | 5 0 0 | Dec. 1884 |
| 12000 | Cobre Copper Company, c. Cuba | 40 0 0 | 4 | 3 5 | 101 0 0 | 1 0 0 | Jan. 1885 |
| 10000 | Don Pedro No. del Rey, Brazil | 16 0 0 | — | — | 6 18 0 | 0 10 0 | Nov. 1885 |
| 100000 | Don Pedro No. del Rey, Brazil | 0 14 0 | 1 | — | 0 0 9 | 0 0 9 | Dec. 1885 |
| 70000 | English and Australian, c. | 5 0 0 | — | — | 1 12 0 | 2 0 0 | Aug. 1884 |
| 25000 | Gen. Mining Assoc., Nova Scotia | 20 0 0 | 21 | 19 21 | 21 0 0 | 1 0 0 | June, 1884 |
| 68000 | Kapunda Mining Co., Australia | 1 0 0 | — | — | 0 12 0 | 0 1 0 | June, 1884 |
| 10000 | Luisiana (Portugal) | 1 0 0 | — | — | 1 7 0 | 0 3 0 | Oct. 1885 |
| 10000 | Mariposa and New Granada | 1 0 0 | — | — | 0 9 0 | 0 1 0 | Jan. 1885 |
| 43174 | United Mexican, c. Mexico | 28 5 0 | 13 1/2 | 2 1/2 | 2 19 0 | 0 5 0 | Nov. 1884 |
| 10000 | Vancouver, c. S. A. | 5 0 0 | — | — | 0 15 0 | 0 5 0 | Nov. 1884 |
| 45000 | Yudanamutana, c. S. A. | 3 0 0 | — | — | 0 5 0 | 0 5 0 | Aug. 1883 |

NON-DIVIDEND FOREIGN MINES.

| Shares. | Mines. | Paid. | Last Pr. | Business. | Total divs. | Per share. | Last paid. |
|---------|--|---------------------------|----------|-----------|-------------|------------|-------------|
| 35000 | Alamillos, c. Spain | 2 0 0 | 1 1/2 | 1 1/2 | — | — | Fully pd. |
| 100000 | Anglo-Brazilian, c. Brazil | 0 8 0 | — | — | — | — | Dec. 1883 |
| 40000 | Britannia Silver-Lead Mines, France | — | — | — | — | — | Feb. 1884 |
| 25000 | Capula, c. Mexico | 1 8 0 | — | — | — | — | Feb. 1884 |
| 20000 | Chontales, c. Nicaragua | 2 10 0 | — | — | — | — | July, 1886 |
| 10000 | Copiapu, c. Chile | 2 10 0 | — | — | — | — | April, 1886 |
| 300 | Copper Mines Co. of South Australia | 150 470 pd.] | — | — | — | — | Jan. 1886 |
| 50000 | East del Rey, c. Brazil | 2 15 0 | — | — | — | — | Jan. 1886 |
| 15000 | El Chico Silver Mining and Reduction Company | 4 10 0 | — | — | — | — | Jan. 1886 |
| 8000 | English and Canadian Mining Company | 5 0 0 | — | — | — | — | Fully pd. |
| 40000 | Fortuna, c. West Australia | 2 0 0 | — | — | — | — | Fully pd. |
| 50000 | Frontino and Bolivia, c. New Granada | 1 7 6 | — | — | — | — | Aug. 1886 |
| 80000 | Great Northern, c. South Australia | 1 1 6 | — | — | — | — | Sept. 1886 |
| 10000 | Great Barrier Land, Mining, c. New Zealand | 5 0 0 | — | — | — | — | Fully pd. |
| 12000 | Nerunda Coal and Iron | 5000 £5 pd., 3000 £3 pd.] | — | — | — | — | Sept. 1885 |
| 50000 | North Scotia Lanes and Gold | 1 15 0 | — | — | — | — | Sept. 1885 |
| 15000 | Otea, c. New Zealand | 1 10 0 | — | — | — | — | April, 1886 |
| 15000 | Pacheca Silver Mining Company, Mexico | 1 0 0 | — | — | — | — | April, 1886 |
| 6000 | Peel River Land and Mineral | 100 0 0 | — | — | — | — | Stock. |
| 30000 | Pescadero, c. Venezuela | 1 10 0 | — | — | — | — | Stock. |
| 22000 | Rhodesia Consolidated | 10 0 0 | 2 | 1 1/2 | — | — | Fully pd. |
| 10178 | Rhodesia Consolidated | 10 0 0 | 2 | 1 1/2 | — | — | Fully pd. |
| 20000 | Rossa Grande, c. Brazil | 0 7 6 | — | — | — | — | May, 1886 |
| 15000 | San Pedro del Monte, c. Mexico | 3 0 0 | — | — | — | — | Jan. 1886 |
| 10000 | San Roque, c. Spain | 5 0 0 | — | — | — | — | Fully pd. |
| 30000 | Val Antigua, c. Spain | 0 15 0 | — | — | — | — | July, 1886 |
| 6000 | Val Sassam, c. S. A. | 5 10 0 | — | — | — | — | July, 1886 |
| 5000 | Valdemar Mining Company | 20 0 0 | — | — | — | — | Fully pd. |
| 40000 | Vallanzuela, c. Italy | 0 15 0 | 1 | 1 1/2 | — | — | July, 1886 |
| 45000 | Victor Emanuel, c. Italy | 1 0 0 | — | — | — | — | Fully pd. |
| 20000 | Washoe, c. [10000 £5 pd., 10000 £4 pd.] | 1 0 0 | — | — | — | — | Fully pd. |
| 40000 | Worthing, c. South Australia | 1 0 0 | — | — | — | — | Fully pd. |
| 7500 | Yorke Peninsula, South Australia | 1 0 0 | — | — | — | — | Fully pd. |

BANKS AND FINANCIAL COMPANIES.

| Shares. | Banks. | Paid. | Last Pr. | Buss. | Divs. | Divs. |
|---------|---|-------|----------|--------|--------|--------|
| 10000 | Alliance** | 25 | 0 0 | 21 | 21 | 22 |
| 10000 | Australian Mort. Land and Finance | 5 | 0 0 | 4 1/2 | 4 | 4 1/2 |
| 30000 | Australasia* | 40 | 0 0 | 68 | 67 | 69 |
| 10000 | Bank of Egypt | 25 | 0 0 | 30 | 28 | 30 |
| 10000 | Bank of Otror** | 10 | 0 0 | — | 5 | 7 |
| 10000 | Bank of Victoria, Australia* | 25 | 0 0 | 41 | 38 | 41 |
| 10000 | Bank of New Zealand* | 10 | 0 0 | 18 | 17 | 19 |
| 25000 | Bank of Queensland** | 25 | 0 0 | — | — | — |
| 50000 | Brazilian and Portuguese* | 10 | 0 0 | 9 | — | — |
| 8515 | Canada Company* | 32 | 10 0 | 80 | 77 | 80 |
| 50000 | Canadian Loan and Investment** | 2 | 10 0 | 1 1/2 | — | — |
| 40000 | Chart. Bank India, Aust. & China | 20 | 0 0 | 19 | 19 1/2 | 20 1/2 |
| 20000 | Char. Merc. India, Lond. & China* | 25 | 0 0 | 37 | 36 | 38 |
| 20000 | City* | 10 | 0 0 | 17 | 15 | 17 |
| 40000 | Colonial† | 25 | 0 0 | 40 | 38 | 40 |
| 150000 | Company of African Merchants.*† | 3 | 0 0 | 3 | 2 1/2 | 3 |
| 200000 | Consolidated Bank** | 4 | 0 0 | 6 | 5 1/2 | 5 3/4 |
| 200000 | Credit Foncier and Mobliier of England† | 8 | 0 0 | 5 | 4 1/2 | 5 |
| 10000 | Discount Corporation† | 20 | 0 0 | 10 | — | — |
| 20000 | East London* | 5 | 0 0 | 3 1/2 | 3 | 4 |
| 20000 | English, Scottish, & Aust., Chart.*† | 20 | 0 0 | 19 | 17 1/2 | 18 1/2 |
| 20000 | English and Swedish** | 20 | 0 0 | 14 | 10 | 13 |
| 20000 | General Credit and Finance of London* | 6 | 0 0 | 4 1/2 | 4 1/2 | 4 1/2 |
| 20000 | Imperial Bank* | 20 | 0 0 | 25 | 23 | 26 |
| 150000 | International Financial Society** | 5 | 0 0 | 2 1/2 | — | 4 |
| 300000 | International Land Credit** | 6 | 0 0 | — | — | — |
| 4000 | London African Trading** | 10 | 0 0 | — | — | — |
| 50000 | London Chartd. Bank of Australia† | 20 | 0 0 | 22 1/2 | 23 | 24 |
| 25000 | London and County* | 20 | 0 0 | 64 | 64 | 66 |
| 40000 | London Financial Association** | 25 | 0 0 | 11 1/2 | 12 | 13 |
| 72000 | London Joint-Stock* | 15 | 0 0 | 43 | 43 | 45 |
| 5000 | London Mercantile Discount | 20 | 0 0 | — | — | — |
| 10000 | London and South-Western** | 20 | 0 0 | 17 1/2 | 17 | 18 |
| 50000 | London and Westminster* | 20 | 0 0 | 92 | 95 | 96 |
| 50000 | Mercantile and Exchange* | 11 | 10 0 | — | — | — |
| 7125 | Metropolitan and Provincial† | 20 | 0 0 | 10 | 11 | 13 |
| 50000 | Mineral Rights Association* | 1 | 0 0 | 1 | 3/4 | 7/8 |
| 50000 | National of Australia* | 4 | 0 0 | 1 | 5 | 6 |
| 50000 | National of Liverpool* | 50 | 0 0 | 74 | 12 | 73 |
| 50000 | National† | 50 | 0 0 | 74 | 73 | 73 |
| 75000 | New South Wales† | 20 | 0 0 | 45 | 43 | 45 |
| 100000 | Union of Australia**† | 25 | 0 0 | 48 | 48 | 50 |
| 40000 | Union of London† | 15 | 0 0 | 49 | 47 | 49 |